This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

BIBLIOTHECA · BOSTONIENSIS · MEDICINAE
SERVAT ET DOCET
FVNDATA
EX DONO

BOSTON MEDICAL
AUG 1 1962
LIBRARY

THE QUARTERLY JOURNAL

OF

Dental Science.

VOL. II.

JANUARY 1858.—JANUARY 1859.

LONDON:
WALTON & MABERLY, UPPER GOWER STREET,
AND IVY LANE, PATERNOSTER ROW.

PHILADELPHIA, U. S.:
LINDSAY & BLAKISTON.

JAN. 1859.

BOSTON MEDICAL
JUL 30 1907
LIBRARY.

CATALOGUED
JUL 30 1907
E. H. B.

INDEX TO VOLUME THE SECOND.

Editorial Department—Leading Articles.

	PAGE
Professional Reform	3
Dental Dispensaries	6
Our Poorer Brethren	8
The past, the present, and the future	131
Surgical Instruments	135
Medical Reform	138
The New Medical Act	259
Protestantism and the College of Dentists	262
Professional Qualifications	266
Valedictory Address	387

Dental Surgery and Mechanics.

On Dental Caries, by W. Perkins, Esq.	11
On Elevator Forceps, by James Bate, Esq.	20
A Lecture on the Principles and Practice of Dental Surgery, by Dr. A. Carpenter	140
The Teeth of past and present Generations, by J. Horne, Esq. ..	165
Construction of Artificial Teeth under difficulties, by E. C. J. ..	169
On the Regulation of Teeth by Extraction, by J. C. Smith, Esq.	270
Sport of Nature, by H. T. Kempton, Esq.	274
Complete Luxation of a Central Incisor, by J. Bate, Esq. ..	276
Improved Bellows Blow-pipe, by W. Hopkinson, Esq.	278
Electro-Magnetism, as applied to Dentistry	347
Gun Shot Wounds in the Mouth	392
The injurious effects of the Mercurial Amalgam, indiscriminately used by the public in stopping Teeth	397
Neuralgia Faciei	400
Electricity in Dentistry	402
Finishing off Amalgam Stoppings	404

Chemistry.

Adulteration of Chloroform	48
Ether *versus* Chloroform	50
Electric Gilding	50
Chemistry of Gold, in connection with its use in Dentistry ..	181
Chemistry of Platinum	280

Correspondence.

	PAGE
On Purifying Gutta Percha, by H. L. Jacob, Esq., M.R.C.S. ..	21
On a Case of Necrosed Bicuspid Tooth, by F. A. Sass, Esq. ..	22
On the Materials used in Dentistry, by James Bate, Esq. ..	24
On Cutting Teeth in Advanced Age, by Curius Dentatus ..	25
On Dental Appointments, by C. J. Fox, Esq.	27
The late Proceedings of the College of Dentists, by W. Perkins, Esq.	171
Taking Impressions of the Mouth, by J. Humby, Esq. ..	175
Dental Dispensaries, by Incisor	176
Chemists and Dentists	179
Note from C. J. Fox, Esq.	179
The Electric Cautery, by T. Harding, Esq.	180
Note from F. A. Sass, Esq.	180
On the Application of Galvanism to the Extraction of Teeth, by Mr. Davenport	287
The Examination Question, by One of Eight Hundred Outsiders	288
The New Medical Act, by a Stanch M.C.D.E.	290
Mr. Longhurst's Paper on Congelation	290
On Mr. Longhurst's Paper on Congelation, by E. Williams, Esq.	291
Teeth of Past and Present Generations, by W. Perkins, Esq. ..	294
Mr. Patrick and the College of Dentists, by Honour to whom Honour is due	301
Erratum in Report of Mr. Rymer on Dental Irregularities, by F. Weiss, Esq.	302
Galvanism in Extraction of Teeth, by J. Horne, Esq.	302
Letter of Mr. Rymer to the Monthly Dental Journal, and Correspondence thereon	303
On Vulcanite Rubber, by a "Whistler"	359
On the Vulcanite Process, by "Vigil"	360
The Vulcanite Base	405
Effect of Adulterated Food on Teeth	407
Teeth of Past and Present Generations	408
Reply to Mr. Williams's Paper on Congelation	415
Caution to Dentists	415
Mr. Humby's Paper on Blow-pipe	416
Mr. Patrick and the College of Dentists	417

Extracts from Periodicals.

Encephaloid Tumour of Antrum, its Removal by a New Procedure, by R. Davies, Esq. M.R.C.S.	27
Cheoplastic Dentistry, by Dr. Shepherd	37
Obscure Diagnosis of Toothach	42

PAGE

A simple Method of overcoming a Difficulty 43
Facial and Dental Neuralgias 44
Complete Section of lower Lip 44
Temporary Sets 46
Medullary Cancer of a Girl's Jaw 47
Cements for Stopping Teeth 48
Death from Chloroform 48
Chloroform in Operations 187
Chloroformic Drunkenness 189
Remarks upon the Teeth of the Natives of India 190
The Dental Question 192
Aluminium Sutures (from the *Lancet*) 305
Death from Chloroform (from the *Med. Circular*) 306
Salivary Calculus 417
On the hardness of Metals and Alloys 425
The Uses of Bleeding in Disease 432
Royal College of Surgeons and the General Medical Council 438

The College of Dentists is taking Root 440

Lectures at the College of Dentists, by Dr. Richardson .. 444

Transactions of the College.

The Proceedings at Monthly Meetings.

JANUARY 5.

Monthly Meeting 51
Election of New Members 51
Museum and Library Report 53
Paper by Mr. Rogers on Pivoting 53
Discussion of Mr. Rogers's Paper 58

JANUARY 8.

Special General Meeting, for considering Terms of Amalgamation with the Odontological Society 61
First Annual General Meeting 80

FEBRUARY 2.

Monthly Meeting 98
Paper by Mr. Weiss, on Manufacture and Application of Gutta Percha to Dentistry 98
Discussion of Mr. Weiss' Paper 107

FEBRUARY 9.

PAGE

Special General Meeting, on "Vote by Proxy for Country Members" 110

MARCH 2.

Monthly Meeting 111
Museum and Library Report 111
Paper, by Dr. Reid, on the ***Decay of the First Molar*** 112
Discussion of Dr. Reid's Paper 118
Mr. Humby on Mechanical ***Dentistry*** 118
Dr. Reid's Table of Operations 119
Special General Meeting, called to reconsider Terms of Amalgamation 120

MARCH 2, *continued.*

Monthly Meeting—*Paper on* ***improved Blow-pipe:*** *by* ***J. Humby, Esq.*** 195

APRIL 6.

Monthly Meeting—Discussion of Mr. Humby's Paper on the improved Blow-pipe 196

MAY 4.

Monthly Meeting—*Paper on* ***Congelation:*** *by* ***S. Longhurst, Esq.*** 200
Discussion of Mr. Longhurst's Paper on Congelation 209

MAY 21.

General Meeting, to elect a President, and fill up vacancies in the Council 210
List of Officers elected 230

JUNE 1.

Monthly Meeting—*Paper by* ***Mr. Rymer, on the Mechanical Treatment of the Irregularities of the Teeth*** 232
Discussion of Mr. Rymer's Paper 236

JULY 16.

Special General Meeting to revise Laws 307

AUGUST 7.

Special General Meeting, to consider best means to bring about unity in the Profession 330

AUGUST 25.

PAGE

Special General Meeting, to consider Regulations in regard to Diploma 334

OCTOBER 5.

Monthly Meeting—*Paper on Aluminium: by Mr. Harrington* .. 451
Discussion of Mr. Harrington's Paper 457
Electricity in Dental Operations—Meeting on 459

NOVEMBER 2.

Monthly Meeting—*Paper on striking up Gold Plates: by R. Thomson, Esq.* 472

DECEMBER 7.

Monthly Meeting—*Paper, by — Bate, Esq., on Filling Teeth, and Judgment required in Selecting Materials* 480
Discussion on Mr. Bate's Paper 488

Miscellaneous.

Case of Strumous Diathesis, by Dr. S. L. Gill 10
Dental Memoranda, by T. Purland, Ph. Dr. 121
New Discovery 123
Teeth in Consumption 123
Medical Practice in Beloochistan 124
Dental Dispensaries 124
Dentists' Assistants' Provident Association 124
Dental Memoranda, by T. Purland, Ph. Dr. 242
Dr. Blakesley's Method of Filling Teeth 244
On the Simultaneous Intrusion of Solids into the Air-Passages of the Lungs 246
Monument to Jenner 249
Dental Hospital of London 352
Dental Memoranda, by Dr. Purland 353
Death from Chloroform at Epsom 355
Birmingham Dental Dispensary 356
A Candid Admission 356
Dental Memoranda, by Dr. Purland 490
Dental Hospital 493
Death of Dr. Bright 494
Royal Sea Bathing Hospital, Margate 495

The New Medical Act .. .. 364.

Reviews.

PAGE

Human Osteology, by Luther Holden, F.R.C.S. 125
Harding on the Electric Cautery 127
Archives of Medicine, by Lionel S. Beale, M.B., F.R.S. .. 250
On Irregularities of the Teeth, by C. Gaine, M.C.D.E. .. 252
The Dental Register of the West, by Messrs. J. Taft and G. Watt 253
Journal of Practical Medicine and Surgery, edited by Dr. Lucas Championniere 254
Note of Inquiry, as to who first applied Galvanism in the Extracting of Teeth 254
The American Journal of Dental Science—The Dental News Letter—and Monthly Journal of Dental Science 360
Archives of Medicine 497
Practical Hints upon the Administration of Galvanism in the Treatment of Disease 498
The Principles and Practice of Dental Surgery 498

NOTICES TO CORRESPONDENTS .. pages 127, 255, 383, & 500

Postscripts.

Special General Meeting 128
College of Dentists—Results of Poll 356
Galvanism in Dental Operations 358
Letter from Mr. Beresford Hope, M.P. to the President of College of Dentists 359

THE

QUARTERLY JOURNAL

OF

DENTAL SCIENCE.

Charles Ritchie & Co., Printers, Fore Street, London.

9418

BOSTON MEDICAL
JUL 30 1907
LIBRARY.

QUARTERLY JOURNAL OF DENTAL SCIENCE.

APRIL 1858.

PROFESSIONAL REFORM.

GREAT REFORMS are seldom accomplished at once, and this is peculiarly the case when the elements to be reformed are wholly disorganized. We had hoped, that the movement in our own profession would have proved an exception to the rule, and that when once the good work of uniting the Dentists of this country into a recognised body was commenced, it would be brought to a speedy, as well as to a successful issue. Such, however, it would appear, is not to be the case, unless indeed the pioneers of progress should at once magnanimously consent to merge their differences of opinion as to the means of attaining the important end, which we feel convinced they have in view—that is to say, the dignity of the profession.

A perusal of the several reports of the General Meetings of the College of Dentists, which we publish elsewhere, will shew, that the terms of amalgamation, as proposed by the late delegates of the College, and the Odontological Society, have not been adopted by the former body. Upon the terms themselves we have little to say. It is not for us to dictate to the Members of the College upon them. All that we have to say is this:—In arriving at a conclusion upon the propositions, it is our firm conviction, that the gentlemen who exercised the constitutional right of voting upon the question of their absolute acceptance or rejection, did so from conscientious and honourable motives—and from conscientious and honourable motives ALONE. We dislike

entering into controversy with a contemporary, nor shall we do so now, except to record our absolute disapprobation of the course pursued in a quarter where it was the least to be expected. Our readers will probably not need reminding of the publication to which we allude, wherein have appeared aspersions the most ungenerous—aspersions which undoubtedly have had the effect of retarding, in a material degree, the cause we have so much at heart. We should have passed this unfortunate matter without notice, were it not for the authority which the Journal referred to is supposed to possess, as the organ of a Society of gentlemen, numbering amongst its Members some of the most deservedly influential Dentists of the day.

And now for the future.—We have full confidence in the ultimate success of the present movement; but we are not so confident of witnessing the establishment of an educational institution, suited to the requirements and dignity of our calling, within the next twenty years, unless, as before stated, an extraordinary effort is made to restore good feeling, by those who have it in their power to calm the troubled waters. Doubtless there are such. They may think differently as to the means of attaining their end upon the vital question of reform, but there *can* be no difference of opinion as to the barrier to progress which is raised in disunion. We are firmly convinced, that NO dental institution will be successfully established, whilst there are two or more rival or opposing bodies in the field: therefore, let the one grand object of all our brethren be—to secure unity of action.

The College of Dentists having been constitutionally established, as a public body, can exercise a powerful influence for good in this respect. The desire to form an union with the Odontological Society being, we believe, unanimous, although not upon the exact terms recently submitted to the Members, it has been suggested, that a general meeting should be convened to consider the whole question, and to

take steps for securing an amalgamation upon terms to be then determined, but which terms shall be subsequently open to the full and free discussion of the Members of the Odontological Society, and to be by them returned to the College, with such amendments as they may think desirable. If this course were pursued, we have little doubt that the vexed question would be settled in an amicable and becoming spirit; and thus would a few individuals be relieved from the responsibility of a most delicate and thankless office.

There is but one obstacle, we imagine, to the carrying into effect of this suggestion, but it is a serious one. Although the Members of the College to a man desire amalgamation, they cannot agree upon a vital point. We do not allude to the *title* of a new institution, because we can scarcely regard this as affecting a fundamental principle, so long as it is understood, that a name, implying an educational body, will be substituted. The point we refer to is, the dependence or independence of the dental profession. *Yet here all are agreed.* We have not heard of a Member of the College of Dentists, who does not believe that the profession should be an independent body. The real difference of opinion lies in this:—That there are some who consider an examination conducted at the College of Surgeons, by a Board composed of Surgeons and Dentists, in equal numbers, would secure the independence of the profession; whilst others contend, that any thing short of examinations, conducted under the immediate control of a body of dentists, would *not* secure independence. Both divisions are, of course, convinced of the correctness of their views; and where doctors disagree, who shall decide? Shall we be so presumptuous as to advise? The intersts which are at stake are so vast, that we will venture to do so. Let *this* question, then, be put to the vote of the Members at large:—"Is a connexion with the College of Surgeons, upon the condition

that dentists shall receive diplomas from a mixed board of surgeons and dentists, compatible with independence?" If this should be agreed to, it must be a distinct and honourable understanding that the minority shall give way to the majority, however the question may be decided, and that the matter shall be then and for ever set at rest.

But, if from causes beyond our knowledge or conception, a reasonable solution of the difficulty, such as we have suggested, cannot be carried into effect, we would then call the attention of the profession generally—the College of Dentists, the Odontological Society, and outsiders, to the importance of seeking the intervention of Parliament in determining upon what basis consolidation shall be effected; and pending this impartial investigation, let it be agreed by all parties to allow the points at issue to remain in abeyance.

We would earnestly impress upon all who may be concerned in future discussions upon the subject of these observations, the propriety of calm and deliberate consideration, alike in the expression of opinion by the tongue, or with the pen, remembering always that the object in view is the elevation of a noble calling; but, that if that object is to be attained, each one who gives his opinion upon the means of its accomplishment is entitled to respectful consideration; for, we speak with confidence when we assert, that all those who have laboured and are labouring, so indefatigably and so perseveringly in the work of dental reform, have acted with a single view, and with the most disinterested motive.

DENTAL DISPENSARIES.

Human Nature is prone to extremes, and this truth is being exemplified in the disposition at present prevailing for establishing "Dental Dispensaries." For many years, the poor of this metropolis have suffered from inadequate

dental attendance at the Hospitals and public Institutions, where they might naturally have hoped for relief—a state of things much to be deplored; but suddenly we find this defect attempted to be remedied by a kind of effort on the part of individuals to a certain extent unknown, in the direction above alluded to. We do not intend to question the necessity for professional skill being placed at the disposal of the poor, for we have held and advocated it; neither do we insist that these Dispensaries, with their published and circulated list of "office bearers" were organized for other than the most charitable objects, nor for a single moment imply that *notoriety* ever tinctured the motives of the gentlemen whose names are now before us: but we do most emphatically protest against this method of supplying an acknowledged want, because we believe that it is not the right one.

What is to prevent a Dentist of six or twelve months' experience from originating such an Institution? What is to avert the cruelty of such a one getting operative "practice" at the expense of the patients, who would necessarily seek his advice (?) when suffering from more or less protracted pain!

The public are sensibly aware of the fact that there are men in our ranks, who, so far as quiet, legitimate practice is concerned, will not subscribe to the poet's words

> "O for a lodge in some vast wilderness,
> Some boundless continuity of shade;"

and when so tempting a bait as instituting a Dental Dispensary, with all its accompanying and necessary publicity lies open to the entire Profession, we fear that under the auspices of such individuals as are least able to carry out the scheme, we shall have these establishments springing up in tolerable numbers within every parish, unless some means be taken to arrest them.

If we are to have Dental Dispensaries, let them be of such a class and calibre as will reflect the utmost credit upon our body, and not tacitly allow a decided evil to creep in among us, under so fair and complete a disguise, more especially when the cry for dental reform is so strong and clear. We hope the time is not far distant when an Institution will be organized as the common act of the profession, and at the proper moment, and with the necessary counsel and caution, sister, or branch associations, may be originated in various parts of London, to be conducted by men of acknowledged professional skill. Until then, we say, let those practitioners whose position has been fairly earned be appointed, whether Members of the Royal College of Surgeons or not, to fill the vacancies at present existing in our Hospitals, Medical Schools, and Public Charities.

This would do away with the absurdity of dental non-appointments, and preserve the poor from physical suffering, on the one hand, and the public from the gripe of the charlatan on the other, and yet leave many skilful men to work the long-needed Dental Dispensaries.

In these observations we must not be understood to allude to all the Dental Dispensaries which have been established. We know some of these have the guarantee of Committees, composed of gentlemen of position, but we object to a principle which is so pre-eminently calculated to blind the public.

OUR POORER BRETHREN.

Whatever differences of opinion may be entertained by the profession in political matters, there is one point, we feel assured, upon which the most cordial unanimity will prevail. We allude to the duty of providing a benevolent fund for the relief of our poorer brethren, their widows, and orphans. This important question has been held in

abeyance, owing to the excitement which has prevailed, in reference to the organization movement; but we believe the time has arrived when it is no longer right to delay the good work.

It may be said, that the profession is yet very far from organized; and it would be well to settle the points at present in agitation upon the question, before undertaking anything new. To this we would reply, that to found a benevolent fund is a labour of love which should have nothing whatever to do with any question of politics; and, that during the last few months, which have witnessed the exertions in the cause of dental reform, several cases of severe distress in the profession have come under our notice. For obvious reasons it would not become us to give these cases in detail, but we may state in general terms, that more than one family has been deprived of the means of sustenance by the death of a professional brother, within the last year; that application has been made to gentlemen, holding public positions in the profession, for information as to whether aid could be obtained from a benevolent fund; and it has been their painful duty to communicate to the widow and the orphan that provision for them had not been made. We would earnestly bring this subject into serious consideration, because distress is probable with many at any moment; and if this year should pass over our heads, and at the end of it we have brought to our remembrance cases of misery, from our neglect of duty, we cannot but reproach ourselves: we shall do so the more severely, if vexatious dissentions should have occupied all our thoughts and all our energies.

Let an effort then be made at once, independently of any party or parties, to establish a dental benevolent fund; and, for our part, we have not the smallest doubt that a ready response will be made to an appeal for effecting so desirable an object, both by the profession and the public.

CASE OF STRUMOUS DIATHESIS.

Communicated by Dr. S. L. GILL, Campbell Terrace, Bow.

Caroline C ——, Bow Common, Middlesex, aged thirty-six, of strumous diathesis, applied to me, having suffered for three years from a running sore on the right side of the sternum over the cartilage of the fourth rib.

There was great inability to open the mouth, as the side of the jaw was much thickened, and the tonsil of the same side considerably enlarged, presenting a very suspicious appearance, accompanied by a most offensive discharge. Several cicatrices under the angle of the jaw on the affected side, indicated points from which pus had been evacuated from glandular abscesses. The glands about and under the angle of the jaw and side of the neck were much enlarged, as was also the carotid, whilst the side of the face in front of the ear was prominent and hard. The lymphatics were much corded, and the sterno-mastoid muscle puckered in with the skin, the sternal end of the clavicle was likewise thickened; in fact, taking the case as a whole, my first impression was unfavorable. The mouth was in a decidedly unwholesome condition, and the teeth covered with tartar.

Whilst making my examination of the enlarged glands, a thin pus exuded from the opening over the rib, and on passing a very fine gold probe into the opening, it traversed high up in the course of the sterno-mastoid muscle. The dens sapientiæ was decayed, and considering it would at least cause irritation, I removed it, when a small quantity of pus exuded. I ordered unguent. potass. iodidi. to be applied over the glandular swellings, and cod liver oil internally. In five weeks, I had the satisfaction to see the case cured; the sinus over the rib had healed, and the inability to open the jaw was greatly improved; in fact, I may say, she was restored to health.

S. L. GILL.

P. S. The enlargement upon the tonsil I excised.

DENTAL SURGERY.

ON DENTAL CARIES.

A Review of the different theories on the cause of dental caries, with observations on the supposed advantages enjoyed by the ancients over civilized nations of the present day, in regard to their teeth.

By William Perkins, Esq.

Much has been said and written from time to time on the causes of decay in the teeth, by the disease known as caries; and as in all cases, where the cause is not so apparent as the effect, a great many speculative ideas have been put forth by those persons who have had opportunities of watching the progress of the disease, as well as of testing their particular theories; the result is, that there are some points upon which all are agreed; while there are others upon which the greatest possible difference of opinion still exists.

We all know what will produce caries, but we are not all agreed upon what *does* produce caries ordinarily. Some months ago, for instance, I had the pleasure of hearing a gentleman read a paper on dental caries, in which he divided the subject under three heads, namely, lateral pressure, crucial decay, and erosion. Another gentleman, who has written a great deal on the subject, seems to attribute all, or nearly all, the mischief, to an acid state of the juices of the mouth, while others say, that tartar causes decay, and that the grinding of the surfaces of the teeth together during sleep, by fracturing or chipping the enamel, paves the way for caries. Another still more recently attributed the cause to adulterated food, copper in pickles, chalky-made confectionary, and sundry other adulterated articles of sweet and tempting luxury, much sought after and consumed by little boys and girls of tender age; making a comparison also between the teeth of savages and civilized man, in which the savage is represented to have a great advantage over the civilized man, as far at least as teeth are concerned; and concluding his theory with an oft-told lamentation on the degeneracy of teeth of the present age, as compared with the teeth of by-gone generations.

It is not my intention to treat at great length the whole of these theories, or opinions, but to take a cursory view of them, agreeing

with or dissenting from them, as I may feel justified in doing, from my own individual experience.

I will commence with lateral pressure as a *cause*, that standing first in the category.

Lateral pressure I do not believe to be a *direct* cause at all, for as far as my observation serves me, in cases where the teeth are much crowded, decay, when it *does* take place, does not as a rule commence on those parts which are actually in contact, but rather nearer the necks of the teeth, on those parts which overlap each other, and from the difficulty of keeping them clean, serve to collect and keep in contact with the enamel that soft cheese-like substance called by the French "limon," and which exerts a very injurious effect on the teeth if kept in constant contact either with the dentine or enamel. I do not say that decay never occurs at the absolute point of contact; there is no doubt but that it does take place frequently; at the same time there are so many cases of teeth remaining in the head, bearing strongly on their sides, the unmistakeable proofs of having been subjected to considerable lateral pressure for many years without sustaining the slightest injury therefrom, that I feel fully justified in doubting whether lateral pressure is a direct cause of decay; how, in my opinion it acts as an in indirect cause I have explained.

Crucial decay is an effect, not a cause. Its causes in my opinion, are principally two; first, an imperfect formation in that part of the enamel covering the crowns of the molar teeth, particularly those parts which form the base of the indentations or tubercles, and which in many cases do not unite at the angles where they meet, leaving the dentine partially exposed through the fissure so left, by which means, portions of food being allowed to remain in the crowns of such teeth, become acetous or decomposed, and act rapidly on the dentine beneath the enamel, even before the enamel itself is apparently much affected; all acids taken into the mouth must, and do, particularly affect teeth of this description. We might briefly sum up the causes then, as, first, imperfect formation; and secondly, the lodgment of food on the imperfectly formed part; in short, want of thorough cleanliness taking advantage of the weakness or imperfection of the teeth.

Erosion, denudation, or notching of the teeth, is also an effect, the cause of which is involved in considerable obscurity; its appearance is very different from ordinary caries; I have seen many cases where the lower front teeth, including the bicuspids, have had the appear-

ance of having been filed away, and carefully smoothed, without even the slightest alteration in the colour of the part, without any softening of the dentine, and without any particular sensitiveness about the part so affected. Acid has been suggested by some as the cause; but it appears to me, that if acid were the cause, the parts acted on would be roughened and softened, which is seldom the case; again, the effect in my opinion would be more general, and take in a larger portion of the tooth, or teeth, so acted on, than is generally found to be the case; the enamel also would be softened, or decomposed, which hardly ever takes place; again, it has been suggested that improper tooth-powders may have something to do with it; such an effect undoubtedly could be produced by the continual use of very gritty tooth-powders, assisted by a small quantity of acid; while the immediate rincing of the mouth, after using the powder, would tend materially to confine the mischief to the softer parts below the enamel, and the polished surface also would be produced; here then we might be satisfied with having found the cause of this curious and unpleasant effect on the teeth, did we not know that this wasting of the dentine is found in mouths where tooth-powder is scarcely ever used, and where the teeth are clean and the mouth healthy. What then is the cause of the teeth dissolving away between the enamel and gum? Can it be by absorption? that is by a similar process to that, by which the temporary teeth loose their roots, previous to the eruption of the permanent teeth. I merely throw out this suggestion, for inquiry, to those who may think proper to investigate the matter further, with a view to elucidate more clearly than has at present been done, the cause, or causes of that mysterious wasting of the teeth, known as erosion. The next theory is acid, either naturally produced in the mouth, or brought into contact with the teeth from without, in the shape of medicine, fruit, or condiment with the food; all who have investigated this matter, only in a very slight degree, know that acids are extremely injurious to the teeth, in whatever way they may be applied, or brought into contact with them; still when we see little children, with their first teeth all decayed previous to the commencement of the development of the permanent set, otherwise enjoying good health, and further, sometimes see the permanent set follow in the wake of the first set, notwithstanding all the pains and care bestowed upon both by their owner and the dentist, it is only reasonable to look a little further than to the acid secreted in the mouth; and, as a general rule, we need not look far for another and principal

cause; a little inquiry will generally prove, that the parents, one or both, have suffered from a similar state of the teeth, and that frail or friable teeth are hereditary, and if an acid diathesis is *also* hereditary, then indeed we have ample cause for all the effects we witness.

I think then that the causes of caries of the teeth may be properly classed under two heads only, namely, constitutional; which constitute by far the greatest part of cases brought under the eye of the dentist, and by far the most difficult to deal with satisfactorily; and secondly, accidental causes, arising from neglect of cleanliness, fracture of the enamel by extraneous substances, such as stones or small flints in currant buns, puddings, &c., left there by the carelessness or want of time on the part of the cook; I confess, that I myself, am rather sensitive on this point, having had my enjoyment suddenly brought to a full stop, and the equanimity of temper much disturbed more than once by unintentionally attempting to masticate one of those plaguy little flints before alluded to. There is one more thing which may come under the head of accidental causes, and that is the administration of dilute mineral acids medicinally. The general effect of acid on the teeth I have alluded to before; but its effect in this particular instance, I think worthy of special remark, as I have seen some few cases in my experience which have been really deplorable. Where acid is necessary, as it often is, its effects should be immediately neutralized by an alkaline mixture such as chalk, carbonate of soda or magnesia, and the acid should be taken by means of a tube or medicine spoon, so as to come in contact with the teeth as little as possible. With regard to tartar causing decay, I am persuaded that this is altogether a mistake; unhealthy and carious teeth will cause a deposition of tartar on their surface, and sometimes cover the decayed parts; but where a sound tooth becomes covered with tartar, as is commonly enough the case, that tooth never decays under its tartarous covering; tartar loosens the teeth, causes their death and loss, but certainly as far as my experience has taught me, never decays them. If the grinding together of the teeth in sleep or otherwise, causes decay, it must be when they become chipped, or partially divested of their enamel. I cannot think that the simple grinding, or rubbing of their surfaces together, can in any way lay the foundation of caries.

I now come to the last thing which I have purposed to deal with, viz. adulterated food. That adulterated food, if the adulterating article be a poisonous or unwholesome one, affects the general health, will be readily conceived, and it may also be admitted that if the

general health is injured, that the teeth may also receive their share of the injury inflicted; but to say that all adulterated food injures the teeth is certainly saying more than experience warrants, or experiments have hitherto proved; there are some articles which do act specifically on the teeth, and these are particularly acids, as I have in a previous part of this paper stated, and vinegar being an acid, is to a certain extent injurious to the teeth; vinegar in its pure state is a vegetable acid, and by no means so powerful an enemy as a mineral acid; if then vinegar is adulterated with sulphuric acid, it becomes much more destructive to the teeth than pure vinegar: but the other adulteration, namely, copper, in a small quantity to colour pickles green, I cannot think would act prejudicially to the teeth, although if the so greened pickles were an article of daily consumption, there can be little doubt, but that the general health would suffer.

The next article of adulteration pointed out by the theorist, of whom I am now treating, is confectionary; he qotes from some treatise on adulterations, and states, that white sugar plums are chiefly composed of a mixture of starch and Cornish clay, a species of pipe-clay; acid drops are coloured with vermillion or red lead, and somebody else says, that *all* cheap lozenges he has examined contain starch, and *nearly* all chalk and plaster of paris; some other adulterations are named as being commonly employed in cheap confectionary, as preparations of lead, mercury, copper, and so forth, all decided adulterations, and some of them very unwholesome ones; still, not one is named, except mercury, which would act specifically on the teeth. Starch is certainly not unwholesome; on the contrary, it is most nutritious, constituting as it does the greatest part of pure bread, and most farinaceous articles of food. Pipe clay is certainly not good for the stomach, but perfectly harmless as regards the teeth, while the chalk and plaster are by no means bad correctors of acid; and if those persons who consume vinegar that is adulterated with sulphuric acid, *could* only be induced to partake largely of the white chalky sugar plums, it is highly probable that the one evil would, in a great measure, be corrected by the other. The whole of this theory may be summed up in these few words—"Unwholesome food will produce bad health; and acids of all sorts will, when brought into contact with the teeth, act injuriously on them."

I now come to a different part of the subject, but by no means a less interesting one, viz., the comparative immunity from caries and loss of teeth enjoyed by uncivilized man over his more polished and

educated fellow creature. I have often heard this theory put forth as a great fact, but I have never heard any sufficient evidence to substantiate it. Many persons of the present day speak with great reverence of the good old times, and others of the freedom and happiness of man in his natural state; but if we analyze one or the other, we shall find that the good old times were *anything but good*, and that the freedom and happiness of uncivilized man have many very great drawbacks in the shape of continual danger of death, and hunger, and many hardships that civilized man is an utter stranger to. With regard to the teeth of savages, I believe very little is really known; and to the remark of a gentleman who once visited a battle field in the interior of South Africa, and was astonished at the beauty and regularity of the teeth contained in the sculls which he found there, I think I might venture to reply, that had he visited a battle field strewed with the dead of *civilized* nations, it is highly probable that he would have found the teeth equally good as in the African field; for the simple reason that the majority, *a very large majority* of the combatants, either savage or civilized, are young men in the prime of youth or manhood. I do not then conceive, that we have any good reason to think the savage better off than the civilized man, as regards the quality of his teeth, but as it is well known that his average length of life is *much less than that of civilized man*, the probability is that he does not live long enough to lose them.

With regard to the ancients having the advantage over us in this respect, I very much *more* than doubt it; and as I happened some time ago to meet with some statistic facts which bear, although not directly on this subject, yet so collaterally close, that I think I cannot do better than to introduce a few extracts from them in this place, and then endeavour to draw some inferences from them, with a view to elucidate this question. I may as well state at once that the article from which I am about to make my extracts will be found in "Household Words," No. 126, published on the 21st of August 1852. The article is an interesting one, and although not a very long one, still too long to transcribe into a paper of this kind, as well as unnecessary, as the *whole* of the matter contained in it does not sufficiently bear on the subject in question. It appears that in Geneva, deaths have been registered ever since the year 1549, and marriages and baptisms since 1550: we have here at once a means of ascertaining the comparative longevity of mankind for the last three hundred years, and also, to a certain extent, the amount of health or disease

during that time. In the article alluded to, the writer very pertinently remarks, that "The old days of dirt and squalor, *called* the good old times, are illustrated charmingly by these Geneva tables." The next thing to be stated is, that the averages given are taken upon periods of fifty and a hundred years, and therefore, I think with the writer of the said article, may be fairly trusted. First, then, it is found, that out of every hundred people born in the sixteenth century, there died, during the first year of infancy, twenty-five; in the seventeenth century, twenty-four; in the eighteenth, twenty; and there now die in our own century fifteen. Within the second year of life in the sixteenth century, there died, out of a hundred children, nine; in the seventeenth century, seven; in the eighteenth century, five; and now, in the nineteenth, four. Between the ages of three and fifteen, the *gain of life* by children in the nineteenth, as compared with those of the sixteenth century, is in the proportion of three to one. Between the ages of sixteen and twenty-five, the odds against the good old times are two to one; from twenty-six to forty they are three to one, and from forty-one to fifty they are two to one. Here follow some very pithy remarks on the times, and the lusty men from whom we are said to have degenerated; with some reasons for the great mortality of former times as compared with our present hard and degenerate times; but as I have given my author for the reader's satisfaction, and in *fairness to the author from whom I gather these facts*, I shall leave the reader to consult the article himself, if he should think fit so to do, and conclude my extract with the average duration of life in Geneva, from the sixteenth century up to the year 1833.

At the end of the sixteenth century, the average duration of life was twenty-one years and two months. In the seventeenth century, it was twenty-five years and eight months; in the first half of the eighteenth century, the average length of life had risen to thirty-two years and seven months; and the next half century, improvement still continuing, the average was thirty-four years and six months. Between 1801 and 1813, the average still rose, and had become thirty-eight years and six months; and between 1814 and 1833, the average length of life became nearly forty-one years. Here the tables stop; but, as the writer remarks, there can be no doubt that the improvement has continued.

Now, in the above extracts, it must be observed, that we have facts to deal with, and not speculative ideas; there is no supposition

about the business; and we have only to note the gradual and continual increase in the length of man's life for the last three hundred years, to convince us, *at once and for ever*, of the fallacy of praising those good old times in which our fathers lived; were it necessary, I might refer to the history of our own country to prove that our own times are, in every respect, preferable to the past days of plague, pestilence, and famine, which we read of in former days; in short, the good old days, I think, may be very aptly compared to some eastern cities which I have had the pleasure of reading of, without the trouble or annoyance of visiting; viz., beautiful and picturesque at a distance, but pestilential, foul, and disgusting in the extreme upon a closer acquaintance. Upon taking these statistic facts into consideration as bearing upon our subject, I am led to inquire, whether it is probable, that in the ordinary state of nature, man should become healthier and longer lived, so as even to double the average duration of life by gradual improvement during a term of three hundred years; and that his teeth being a part, and by no means an insignificant part of him, should degenerate in an inverse ratio as his general health and length of life has improved?

We are led to ask, What has been the cause of his lengthened life at the present day, compared with the half term that was allowed to him three hundred years ago? And if we search for information in the social history of mankind, we shall find that it has resulted from a better knowledge of the wants and necessities of human nature, improved surgery, improved medical knowledge, cleanliness in the place of filth; better feeding, clothing, and housing; in short, by doing all to preserve life, instead of ignorantly or carelessly allowing disease to arise, increase, and carry off its hundreds and thousands; where, with a proper knowledge, properly applied, tens and hundreds would have sufficed. It is then, I think, too much to ask us to believe, that human teeth, have degenerated, while human nature has, in every other respect, so greatly improved, because some persons take a fancy to think so.

It was observed by a gentleman, regarding this theory, of good old teeth versus bad modern ones, that he was inclined to think the ancients had better teeth than the moderns, because he had on some occasion, somewhere seen three ancient skulls with good teeth. But what does this amount to? Really nothing at all. If it were required, I have not the least doubt, but that not three, but *three thousand modern skulls* could very easily be found with excellent teeth in

all of them. As to the theory propounded by another gentleman of the Hindoos and ancients Egyptians, possessing such remarkable good teeth, I must say I have not much faith in it; when I remember to have heard the same gentleman, on a previous occasion speak of a gold plate taken out of, or seen in, the head of an Egyptian mummy, as well as a pivot tooth in his own possession taken from a similar position. Add to these, the discovery also by the same gentleman, of sundry gold stoppings in mummy heads, I am forced to the conclusion that if all these specimens of Dental art could be discovered amongst the very limited number of mummies brought to this country, that the Dental art must have been very well known amongst the Egyptians, and that if it was; there can be no reasonable doubt of their having had their full share of bad teeth. As I have no data whatever as to the quality of the teeth of the Hindoos, I will pass them altogether, but as I have had some little experience amongst Mahomedans, I will just say that although they neither drink wine or spirits, they *do have carious teeth, and they do lose them*, and occasionally wear artificial substitutes.

In concluding this part of my subject, I beg distinctly to say, that I do not believe in any one of the too-often vaunted advantages of the ancients over the moderns; and with regard to our particular subject the teeth, I think that having shewn that health and longevity have improved, we have a right, in the absence of proof to the contrary, to assume that teeth have also improved; if they have not, it speaks but little for our profession generally.

That Dentists are useful members of society is daily and hourly abundantly proved; that much is done to relieve and prevent suffering, and with the best success possible, I believe few people doubt, as well as that both health and appearance are much assisted by the dentist; but if, we ask, is the nature or quality of the human teeth improved? This indeed, is a difficult question to answer. As I believe that the greater part of the bad teeth arise from an hereditary defect, and that once badly formed they are incapable of being improved in quality; if this theory be correct, the remedy must be applied to the mother during the formation of the child, as well as to the child after birth. The next question is, what shall that remedy be? Of course one great thing is to keep the mother in as good a state of health as possible during her pregnancy, but we want in addition to this a specific remedy for a special defect. Dr. Taft recommends phosphate of lime as a remedy for difficult or slow dentition, giving it to the mother

previous to the birth of the child, and to mother and child after the birth. He states that it readily applies itself to make up the deficiency. Now if this were proved satisfactorily to answer in most, not to say all cases—it would, in my opinion, be one of the greatest achievements of Dental or modern science, as well as one of the greatest boons ever conferred on humanity. However, at present it requires proof, and it would need years of careful watching in its effects on different subjects, before anything very positive could be said respecting it.

I have now gone over the different theories of the cause of dental caries, as proposed in the first part of this paper; where I have differed, I have given my reasons for differing. I have endeavoured to demolish what appears to me to be an absurb theory regarding the superiority of ancient over modern teeth; with what success the reader will judge for himself.

The paper itself has reached a much greater magnitude than I intended it should have done; nevertheless I do not think I could very well have said less on the subject, though I might have said a great deal more; and I trust that if it does no other good, it will set other heads a thinking, and so correct what I, in error, may have said amiss.

ELEVATOR FORCEPS.

We all know, from the formation of the fangs of the wisdom teeth, in the under jaw, the difficulty that exists in their extraction; I therefore, without any apology, forward you some account of a pair of favourite forceps I use for that purpose. I term them Double Elevators, and the manner in which they are used is as follows:—the blades are opened, and the instrument passed into the mouth, with one blade on either side of the tooth, and immediately on reaching the posterior side of the second molar, the hand is closed tightly and firmly, which of course closes the beak, and consequently forces the instrument between the second and third molars, at the same time starting the tooth, and then, by simply depressing the handles, and making a fulcrum of the second molar, the tooth is raised out of its socket, in the direction of the fangs, and with considerably less pain than with the ordinary elevator. The blades of the instrument are difficult to describe; they are knife-edged, bent at a slight angle, and made

thin as possible in compatability with strength, and the handles slightly curved to admit of the instrument's clearing the under teeth. I have never seen a pair like them, save in my father's surgery, and they are new to all to whom I have shewn them.

JAMES BATE.

47, Old Steine, Brighton. January 1858.

CORRESPONDENCE.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—In the third number of your Journal, Mr. Lord, of Blackburn, has kindly given some information respecting the mode of purifying gutta percha; but the process described by him is so different in some essential points from the results of my experience, that I should feel obliged if Mr. Lord would supply a little further information on the subject. I have been experimenting on gutta percha for some years past, and have purified a great quantity of it, but I have never yet found it dissolve in ether; and when dissolved in chloroform, so far from the pure gutta percha being precipitated, and the impurities remaining in solution, I have always found the impurities insoluble, and having a tendency to separate from the solution of the pure material by rising to the top, or floating suspended in the liquid. Whether the process which I adopt be peculiar to me or not, I have no means of knowing, but I have successfully employed it for about a year and a half, and certainly have not "kept it a profound secret." In the first number of the Quarterly Journal, more than six months ago, I gave a concise sketch of this process, and it was fully described in a paper on gutta percha stopping, which was read at the meeting of the Odontological Society in August last, and which I wrote at the suggestion of one of the members, who kindly offered to introduce the subject to the Society. In the report of the meeting, which appeared in the British Journal of Dental Science, an abstract of this paper is given, in which the process of purifying the gutta percha is detailed with sufficient minuteness. Mr. Lord, however, could not

have seen this at the time his letter was written, which accounts for his remark, that the *modus operandi* had never been made public.

As some of your readers may neither have heard the paper read, nor seen the report of it in the British Journal of Dental Science, you will, perhaps, permit me to repeat here, that the native gutta percha, after being well cleaned with hot water, is made up into little balls, about half-an-ounce weight, which are singly tied up tightly in pieces of white calico, the ends of the strings being left a few inches long; one of these is then placed just inside the orifice of a small wide-mouthed bottle or jar of chloroform, and the ends of the string stretched across opposite sides of the mouth of the bottle, which is then tied down with a piece of moistend bladder, *inverted*, and set aside for a week or ten days; the gutta percha being thus retained at the bottom of the liquid, is gradually dissolved out and rises through the chloroform, leaving almost the whole of the colouring matter and impurities behind in the bag; any insoluble matter that may have found its way through the pores of the calico, may be removed by agitation with water, &c., as mentioned in my former communication to this Journal. The plan of putting loose shavings of gutta percha into a bottle with chloroform, I have always found troublesome and unsatistory; the gutta percha being so much lighter than the chloroform rises in a mass to the top, and requires repeated agitation to effect its solution; not to mention the greater difficulty and waste afterwards, in separating the impurities. I am Sir, &c.,

Bridgewater, October 1857. HENRY LONG JACOB, M.R.C.S.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—You may probably think the following worthy of a place in the Quarterly Journal of Dental Science.

Elizabeth ——, aged 24, consulted me a short time since, respecting the removal of a necrosed bicuspid tooth. She had experienced occasional severe pain from it for about two or three years; an abscess formed, which opened externally, and a fistulous aperture remained in the cheek, through which matter was sometimes discharged. She could only separate her teeth to the extent of the eighth of an inch, and even that but occasionally. When between eight and nine years of age she was attacked with scarlet fever; soon after her recovery, inflammation and death of some portions of the upper and lower jaws

on both sides took place, and several pieces of dead bone were removed, the corresponding teeth coming away at the same time. The parts healed, but the contraction and adhesion of the soft parts within the mouth, which now prevent her from separating her teeth, gradually took place. On the inside of the mouth, a little external to the commissure of the lips on both sides, there is a firm and hard band, which seems to be composed of condensed cellular tissue, which extends, probably, as far as the coronoid process, and which is firmly connected above and below with the upper and lower jaw. It is about as firm, hard and thick as the tendo Achillis, and effectually prevents her from separating her teeth.

The only remaining teeth, when she first consulted me, were the incisors, canines, and the first bicuspid, on the left side in the upper, and the incisors and canines in the lower jaw. On the right side, the space which, in the natural condition, would have been occupied by the first and second bicuspids, is free; and it is only through this small aperture that food is conveyed to the stomach, consisting of the ordinary articles of diet, reduced almost to a state of pulp. She is in good health, strong, and inclined to *embonpoint*. Her object in coming to consult me, was respecting the removal of the first bicuspid on the left side, which had caused the abscess and fistulous opening. This tooth was immediately under the firm band of fibrous tissue; I could not, therefore, extract it with the forceps, but I inserted an elevator between the band and the tooth, and, passing it up to the alveolus, prized out the tooth into the mouth, and it was passed by the tongue through the opening on the right side. I requested an eminent surgeon to see the case, who was of opinion that a permanent cure could be effected, but her parents interfered, and would not allow anything further to be done. I shall be happy to exhibit the model which I have taken of the mouth to any gentleman who may wish to see it.

As neither I nor any of the friends to whom I have spoken have seen a similar case, you may perhaps think it of sufficient interest for insertion.

I may add, that she says that three wisdom teeth have lately pierced the gum, two on the right-hand side, and one on the left side of the upper jaw, which she can just feel with her tongue.

I am, Sir, yours faithfully,

F. A. Sass.

39, Manchester Street, Manchester Square.
February 1858.

ON THE MATERIALS USED IN DENTISTRY.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—I have perused with pleasure the papers in the "Quarterly" which have been read and discussed at the monthly meetings of the College, and I should now like to be allowed to call attention to one in particular, entitled "Mechanical Dentistry;" for my great dislike to bone work, from its known and acknowledged deleterious nature, causes me to feel somewhat sceptical of the opinions adduced during the discussion on its use, as a worthy base for artificial teeth, the worst of evils then seems to have been entirely overlooked. We profess to insert artificial teeth, as a means towards the restoration of health, or as a preventative against its loss, but I will ever maintain, that by the substitution of bone mechanism, we only at once furnish additional work both for doctor and dentist, and the poor unfortunate patient becomes the victim of greater evils than were originally his lot by nature. Can we any of us deny, that the constant impregnation of the fluids of the mouth with the bone, produces its rapid decomposition, thereby tainting the breath in the most disgusting and offensive manner?

It may appear ridiculously-fanciful, but such is my keen sense of the presence of bone in any one's mouth, that I believe few wearing it enter my surgery without my being immediately cognisant of the fact. Can the constant breathing of such fœtid air be conducive to health? My firm belief is, that the most distressing diseases are the result, and life itself is shortened. Why then should we use it? True, I have seen, and many can produce pieces of bone work that have been in wear from eight to ten years, quite hard too, and of the colour of ebony, but this is the exception, not the rule.

One gentleman seems to object to mineral teeth in both jaws from the very disagreeable noise thereby occasioned. Let anyone with a good mouthful of teeth chatter them, and see whether the natural will not outdo the artificial in this respect. No, there is nothing like gold, as pure as can be used, and good mineral teeth, and these well adapted, will prove real blessings to those who need them.

I am, SIR, yours faithfully,

47, Old Steine, Brighton.
February 1858.

JAMES BATH.

CUTTING TEETH IN ADVANCED AGE.

To the Editor of the Quarterly Journal of Dental Science.

Sir,—In your last number, Mr. Robinson favours us with the report of a case of development of the dentes sapientiæ at the advanced age of ninety-four; and mentions that "from various local irritations and twitchings in the gums, his patient, 'The Old Warrior,' thought a third set would soon make their appearance:" such cases I believe are rare; not so formerly, if we may judge from the following extracted from the *Philosophical Transactions*, and *Notes and Queries*, and which I enclose if you think they will amuse your readers, and be worthy of a space in your valuable Journal.

I remain, Sir,

Your obedient servant,

February 1858. Curius Dentatus.

In the Philosophical Transactions of the Royal Society, vol. xxviii., 1713, is the following:—

Part of a letter from Dr. Fred. Slare *to* Dr. Hans Sloane, *concerning a person who had a new set of teeth after eighty years of age, with some observations upon the virtues and properties of sugar.*

Sir,—I have had reason to give a great character of sugar, on account of some extraordinary effects it seemed to have on my grandfather forty years since. He made it his daily practice to take or lick up as much sugar as his butter spread upon bread would receive, for his constant breakfast, unless he happened to exchange it for honey sometimes. He frequently sweetened his ale and beer with sugar: he had sugar put to all the sauces he used with his meat: he had all his teeth in his mouth at eighty years, strong and firm; never refused the hardest crust.

In his eighty-second year, one of his teeth dropt out, and soon after that a second, which he put into my hand, and was one of the fore teeth. He bid me feel the cavity, when I struck my nail upon a bone; in short, all his teeth came out in two or three years, and the young ones filled up their room. He had a new set quite round. His hair, from a very candid white, became much darker. He continued in good health and strength, without any disease, and

died in his ninety-ninth or one hundredth year of plethora, as I guess, from want of bleeding.

This is no romance : he was a Bedfordshire gentleman of an old English family, and the case well known. This reconciled me much to vindicate sugar, which I have done, formerly, before the Royal Society, and have shewn the unjust calumny of the famous Willis against sugar, who charges it with a corrosive liquor, as bad as aqua-fortis ; he calls it aqua stygian. I examined it, and found the charge unjust ; that sugar contained no worse substance in it than milk, and honey, and manna, nay, even bread itself. The experiments were approved, and are in your Journal.

Also, from Notes and Queries —

Cutting Teeth in advanced age.—In a Common Place Book, written by one THOMAS RAWLINS, *of Pophills, between the Years* 1724 *and* 1734, *occur the following entries :—*

There lives in Mill Street, in Belfast, in Ireland, 1731, one Jane Hooks, of one hundred and twelve years of age, who has her memory and appetite as well as when she was but twenty years old, and has got a new set of teeth, which has drove out all ye old stumps.

Robert Lyon, of ye City of Glasgow, aged one hundred and nine years, who was in the service of King Charles I., and who has got a new sett of teeth, and recovered his sight in a wonderfull manner.

" Mrs. Page, of ye Royal Oak, Barnaby Street, Southwark, aged ninety years and upwards, has lately bred six great teeth in ye upper jaw, in June 1732, which is an extraordinary and preternatural instance ; had not a tooth in her head these twenty years past.

Margaret White, of Kirkaldy, in Scotland, aged eighty-seven, who has been toothless for many years, has just got eight new and fresh teeth. April 1732.

In the continuation of " Granger's Biographical History of England," (vol. 3, p. 114) chiefly composed from the author's own manuscript collections, in the account of the Rev. Samuel Croxall, D.D., the well-known translator of " Æsop's Fables," it is stated, that " he died of a fever occasioned by the pain he underwent in cutting a new set of teeth, at the advanced age of ninety-three."

To the Editor of the Quarterly Journal of Dental Science.

SIR,—I beg to enclose you a report of the Great Northern Hospital, by which you will see that my colleague, MR. J. L. STATHAM, is the *Senior* Dentist there, and not myself as would seem by the List of Dentists to London Hospitals, published in your last number.

In compliance with your request for further information, I beg to enclose you an additional List.

Oblige me by publishing this note, and believe me,

SIR, Yours, faithfully,

March, 1858. CHARLES JAMES FOX.

[We are obliged to Mr. Fox for the particulars respecting Dental Appointments, which we shall avail ourselves of in our next issue—*Editor.*]

DENTAL HEMORRHAGE AND CHLOROFORM.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—Perceiving by your Journal, that a paper has been read before "The College of Dentists of England," upon the Alveolar Hemorrhage Compress, I think the following case may prove interesting to your readers. Before stating my subject, however, I am desirous of being thoroughly understood, that I do not condemn the Compress, but the very opposite; for I am sure, that the originator and improver deserves our warmest thanks for their ingenuity—the one in constructing, and the other in improving such a useful article. *Vide* Monthly Journal of Medical Science, May 1846 and January 1847.

The case that I am about to relate, occurred long before the above Compress was brought into public notice. I was requested to attend an aged lady at her residence, who wore nearly a full set of artificial teeth, for in her jaws she had only two of her natural organs left. Under these circumstances, I attended without taking any instruments, thinking that it was her artificial substitutes that required my assistance, instead of which, it was one of her old friends that was annoying her. On examination, I found the left inferior bicuspid extremely loose, and the surrounding parts much inflamed, evidently causing extreme local irritation: without any difficulty,

I extracted the tooth with my fingers. The usual ablutions followed with tepid water, which was scarcely discoloured by the blood from the operation. In about five minutes, the bleeding entirely ceased. I remained with her about half-an-hour, and then left. This was about four, p. m. Ten hours afterwards, I was called from my bed, with a startling announcement, that the lady from whom I had extracted the tooth, was bleeding to "death."

As you may readily suppose, I was much surprised, and lost no time in hastening to my patient. But, as I resided at a considerable distance, I found, on my arrival, that a surgeon had been sent for about two hours previously, who it seems had tried a considerable number of the usual remedies without effect. I then removed the bandages round the head and jaws, and also the cork plug, and then applied the tinctures of catechu, nut galls, &c., but without any good results, and as a last resource, for the hemorrhage was increasing, I took some calcined gypsum (plaster of Paris), and removing a dossel of lint, which I had previously inserted, placed it in the cavity in a dry state, and held my finger firmly over the place for a short time. This proved effectual, for the hemorrhage ceased within a few seconds.

I may remark, the plaster used was recently calcined, consequently set instantly, which was the immediate real cause of the successful results of my experiment.

I am also desirous of detailing the notes of another case, which nearly proved fatal. My reason for occupying your valuable space in the Journal is this—it is to serve as a caution to the younger members of my own profession, when they administer chloroform. I am quite aware, that it is possible some may think such a precaution as I am about to describe as unnecessary; they may have administered chloroform without any apparent dangerous result. But it cannot be denied, that some of the old and most experienced in our profession have had fatal cases. Surely what has occurred with them, may in all possibility happen with others; and you will observe, by the following case, that I was nearly falling into a similar misfortune.

A lady came to have two teeth extracted, under the influence of chloroform, which I administered in the usual way; and in a few seconds a tremor passed over her whole body, at the same moment a deadly palor spread over her face, she gasped for breath, and was be-

ginning to get quite cold and rigid. I had, fortunately, a powerful galvanic battery standing upon my table, the poles of which I instantly applied to the palm of both hands. In a few minutes she gave symptoms of returning animation, and very soon regained her normal condition.

My belief is, this case would have terminated fatally, if I had not happened to have had the galvanic battery in the surgery, and in proper working condition. Yours truly,

W. F. VERNON.

Edinburgh.

THE ODONTOLOGICAL SOCIETY.

If we are correctly informed, a Meeting of the Members of this Society was held on Friday evening, the 19th ultimo, Mr. Harrison in the Chair, when it was resolved—that in the event of the College of Surgeons declining to grant the petition of the memorialists, an independent institute should be formed, similar in principle to the College of Dentists of England. We would counsel the profession to use their utmost endeavours to unite the proposed new society with the latter body, in order to secure the unity of action which is admitted on all hands to be so desirable. It is clear that such a proceeding would be the only one to secure the advantages of an influential body. The constitution of the College would give the sanction of the profession to the new Institution, and the Odontological Society would throw the weight of its influence towards furthering a noble cause, instead of presenting the appearance of gentlemen privately formed into a society, taking upon themselves the responsibility of providing means of education and examination for a profession which does not, and cannot, recognize their authority for so doing.

The whole question appears now to be so narrowed, that we see no reason why the Odontological Society and the College of Dentists should not work together for the general weal.

EXTRACTS FROM DENTAL PERIODICALS.

ENCEPHALOID TUMOUR OF ANTRUM:

ITS REMOVAL BY A NEW PROCEDE.

By REDFERN DAVIES, M.R.C.S., Birmingham.

From the Lancet, January 23, 1858.

Past History.—S. A. C——, aged forty-seven, married, the mother of two children, both alive, the youngest six years of age. She states that two years back she would occasionally have a thick, yellow discharge from the right nostril. It would generally commence upon sitting up in bed in the morning, and with great suddenness, "a stream springing out from the nose as from a blow on it." The discharge would last for a day, and to such an extent, as to cause her to use two or three pocket handkerchiefs. This state of things lasted for about a year, during which time she observed occasional streaks of blood in the mucus from the nose. For the last eighteen months she has laboured under depression of spirits, and feelings of lassitude and weakness. The catamenia have gradually ceased, and have been attended by a little pain. Nothing has been particularly noted, however, till within the last four months, when she has felt a pain in the right upper jaw at times, described as of a sharp-pricking, lancinating character, and occurring for a minute or two at a time, several times in a day. The severity has, however, been so slight as not in any way to cause loss of sleep or appetite, or to interfere with her general avocations, which consist in household duties, and in turning a very large wheel (her husband being a cutler). She has observed that her right cheek has altered in shape. On the 16th of October 1857, (eight days previously to this report), whilst at her usual duties, she suddenly felt her mouth fill with what, as she found when she spat it out, to be blood; the bleeding continued till she fainted, when she had lost about, as she thinks, nearly two quarts. The blood is described to be a bright red colour, but not frothy. It was not accompanied by any act of coughing or vomiting. Since this occurrence, hemorrhage has happened some three or four times, it ceasing only by her becoming faint.

When called to see her, through the kindness of my friend, Mr. Hoare, surgeon, and having received the foregoing history, I found her, just after a bleeding, to be in the

Present state.—A woman of average height, of lax muscular fibre, and somewhat emaciated; face completely blanched; lips and conjunctiva almost bloodless; extremities and surface quite pale; vital powers seem very feeble; expression of countenance on the right side of the face seems altered, and not so marked as on the left. The cheek bone looks swollen.

Examination of Chest.

Lungs.

- Inspection . . — Mobility . . — Right, Left — Unimpaired.
- Inspection . . — Flattening . — Right, Left — Not observed.
- Mensuration . — Right; Left
- Percussion . . — Right, Left — Equal and natural
- Vocal fremitus . — Right, Left — " "
- Auscultation . . — Right, Left — The natural "breezy murmur" heard universally. Humid rhonchus occasionally at the bases posteriorly.

Heart.

- Inspection . . — Apex beat in the normal site. Form of cardiac region unaltered.
- Palpitation . . — Impulse sharp and excited.
- Percussion . . . — Area of cardiac dulness normal.
- Auscultation . — First sound shorter and sharper than usual. No morbid murmur.
- Rhythm . . . — Natural.

Pulse jerking, 102; respirations calm, 20; ratio 1 : 5.1.

Examination of mouth.—Upon looking into her mouth, two molar teeth on the right (said to have been lost seventeen years ago) are gone, and a clot of blood is seen lying in the sockets. On this being partially removed, a probe is easily passed through a fistulous opening in the alveolar process into the antrum; whilst in this cavity it can be moved a little, a resistance being felt, as of striking against a dull mass of recent clot. No blood is caused by this examination, and it is in nowise painful. I could not satisfactorily strike against any of the bones forming the walls of the cavity, fearing to cause bleeding. The external and anterior walls of the antrum seem, when compared with those of the opposite side, a little more prominent;

but they are by no means "expanded," nor do they "crackle" upon pressure.

The expression of face, as already mentioned, is altered, the cheek-bone appearing thrust forwards, but there is no alteration in the colour or condition of the surrounding soft parts. The eye appears natural, and like its fellow. The nares are not encroached upon; no foreign body seems there, nor in the throat. No glandular enlargements in the neck or elsewhere.

Denies syphilis. No hereditary predisposition to phthisis, scrofula, or cancer.

Diagnosis.—Tumour in the antrum, most probably encephaloid; disease at present confined to antrum.

Prognosis.—Under the present circumstances, certain death.

Treatment.—To open the antrum, remove the cause of the disease, and more or less of the jaw as may be then deemed fit. For four days after this visit she went on well, gaining much strength, and seeming to be very much better; no recurrence of bleeding. On the night of the fourth day, however, hemorrhage again occurred, which was immediately arrested by plugging the alveolar process by cotton wool steeped in muriated tincture of iron. Bleedings came on next day, blood now passing through the nose; and when about to proceed to operation, under the sanction of Mr. Sands Cox, the patient seemed too feeble to endure the performance, which was therefore postponed till next day. In the meantime she was well supplied with beef-tea, brandy, &c.

The *Operation* was performed on October 29th 1857, in the presence of several friends, and with Mr. Sands Cox's assistance. The patient was seated in an arm-chair, and chloroform administered. Feeling for the edge of the orbit, I made an incision down to the bone, commencing at the junction of its inner with its two outer thirds as far as the union of the malar with the zygomatic process. Starting again from here, I cut straight to the angle of the mouth. Turning inwards this triangular flap, I freely divided its attachments by the mucous membrane, &c. to the jaw. Forcing a passage by means of the handle of the knife for one of the blades of Liston's bone-forceps, I divided the zygomatic process of the malar bone, and gently separating the soft granular fat upon which the eye lies in the orbit, I passed a blunt needle, which I had had forged on purpose, into the spheno-maxillary fissure. Directing it outwards, so as to pass into the zygomatic fossa, hugging the bone as closely as possible,

it was made to emerge at the junction of the zygomatic with the ascending portion of the malar bone. By this means a chain saw was pulled through, and the malar bone divided. Another curved needle, which I previously so fashioned as to render its passage as facile as possible, was again entered into the spheno-maxillary fissure, and, curving round the zygomatic surface of the superior maxillary bone, merged anteriorly at about the articulation of the malar bone with the upper maxillary. A chain saw followed in its wake, and the section of the bone was performed. By the last cut, the apex of the antrum was completely sliced off, and upon taking away the portion of bone included by the above cuts, the cavity of the antrum itself appeared, containing a tumour which completely filled it. The cavity was then enlarged by means of the bone-forceps, the anterior and external walls being cut away. The tumour was now fairly and completely exposed; it seemed entirely confined to the antrum, and by means of the handle of the scalpel it was thoroughly and easily eradicated. Little or no bleeding occurred during the operation, chiefly owing to the judicious compression of the carotid artery. Some oozing appearing, however, and every ounce of blood being in this case of vital importance, both the cavities in the maxilla and soft parts were filled with cotton wool steeped in muriated tincture of iron, when all bleeding immediately ceased.

After a delay of about two hours, the wound was dressed, the edges brought together by hair-lip pins and sutures, and straps where necessary. Perfect rest and good nourishment to the utmost of her capability of taking. In about two days the pins were removed; three-fourths had united by immediate intention. A portion did, however, from feeble reparative action, give way in the course of the following day. On the fourth day the whole of the pledgets of cotton wool were removed. In short, from the operation there has been a steady and rapid progress towards cure. On the fourteenth day all had united, inside and out, there being only a few granulations at the angle of meeting of the incisions, where some superficial loss of substance had taken place. Some chemosis which had existed was completely gone, and the eye appeared in all respects natural.

Examination of the tumour.—In consequence of the mode of removal of the tumour by pieces, no definite shape could be ascribed to it, further than what was gained by its first appearance on opening the antrum: viz. that it entirely filled it, and must have been conical. It was of a buff colour, and its consistency was what Paget calls

"firm," having apparently an investing capsule. On pressure (especially after contact with water), it yielded abundance of cancerous juice. On examination by the microscope, were seen a vast quantity of free nuclei, nucleated cellules of various shapes, presenting the tail shaped prolongations abundantly, together with the molecular granulation cells.

The portions of bone removed were, upon comparison with skulls, found to be somewhat thinner than normal.

In a diagnostic point of view, this case presents features of peculiar interest, from the absence of, or rather the trivial degree in which, those signs usually deemed pathognomic were present.

The data upon which the diagnosis was based were the following:—

a. By the existence of a free communication through the alveolar process into the antrum, from abscess or an excessive secretion within the cavity. Fluid tumours being excluded, we must next turn to the solid. Of these—

b. Exostosis has a longer date than four months ascribed to it. It is not accompanied by hemorrhage, and the sensation communicated by the probe was conclusive against it.

c. Erectile tumours are stated by Gensoul and Pattison to have been found in the antrum, but their extreme rarity precludes any certainty as to them.

d. Polypoid tumour: supported by the expression of the woman's face, and by the occurrence of hemorrhage. Its non-existence was at once rendered undoubted by the fact of not being perceived in the nostril or throat. John Bell, in his admirable essay on "Nasal Polypi," beautifully describes the passage of polypi from the nostril into the antrum, but never alludes to the converse. And Syme is still more explicit. He says (THE LANCET, vol. i. 1855, p. 253), that polypoid growths in the antrum are always intruders from the nasal cavity, and never developed in the antrum itself.

By the process of exclusion, we are therefore reduced to determine between a benign or malignant tumour.

e. In favour of a benign tumour, we have the non-interference of general health; the neighbouring parts, both over and around the tumour, being healthy; the glands in the adjoining parts being unaffected; the non-hereditary predisposition, and absence of "crackling" on pressure, owing to the unexpanded state of the walls.

The above signs are mostly negative; while we have in evidence of a malignant tumour the characteristics most insisted upon: rapidity

of growth, softness in consistence, the pathognomonic pains, hemorrhages.

Hence the conclusion, looking to both sides of the account: an encephaloid tumour confined to the antrum; anterior wall alone affected.

The *procédé* for opening the antrum has not in any recorded case, as far as I have had the opportunity of learning, been yet put in requisition; and in its justification and applicability to the present case, I should wish to make the following observations:—

All pathologists and operators on the upper jaw seem, with one consent, to strongly deprecate the removal of tumours, and especially cancerous, with a sparing or niggardly hand, the usual counsel and practice being the extirpation of the whole jaw. In this case, however, unlike the generality of those presenting themselves, admitting of, and demanding operation, there was but one portion of the jaw—viz., the outer wall—which showed the least symptoms of being affected. So slight was the deformity, that she might have passed unobserved, and in fact, her neighbours were totally unaware of her labouring under any affection; and lastly, so trivial, or, indeed, *nil*, were the effects, that she had not interrupted her usual duties, being seized during their performance with the first hemorrhage. Between, therefore, the Scylla, on the one hand, of not removing enough, and the Charybdis, on the other, of destroying too much, I deemed, that by cutting wide of the affected part, I should accomplish the cure without unjustifiably doing more than that. The two first divisions of bone were made with the intention of removing freely the body of the malar bone, deeming, that though at present not extensively implicated, it was nevertheless affected; also, that the section by which the antrum was to be opened might be affected. And with the same view, of removing all parts that might be probably implicated, was the anterior wall of the antrum, as formed by the upper maxilla, cut away by bone-forceps.

To the advantages derived from the use of the chain-saw in this operation, I would especially call attention. Its use in this country would seem to be strangely neglected. Two of our great surgical authorities, viz., Fergusson and Erichsen, have altogether omitted any mention of it, even in their latest writings. It is equally ignored by Professor Syme in his "Principles of Surgery." Not so, however, our continental brethren. In both France and Germany its use is of daily occurrence; and it was whilst studying in Paris that my atten-

tion was remarkably struck by its service, more especially in the hands of M. Nélaton and M. Maisonneuve.

The advantages in its use, particularly when applied to operation on the upper jaw, would appear—First, from the *much greater ease and rapidity* with which the bones can be divided, as compared with the ordinary Hey's saw, or with the modifications of Fergusson. Second.—From avoiding all splintering (as will sometimes occur, however carefully used), as compared with the ordinary bone-forceps of Liston. Third.—From the circumstance of cutting from behind forwards, parts are not divided or cut into unintentionally by the saw. Fourth.—By its aid, corners can be rounded, and thus form no hindrance. Fifth.—The division of the bony parts can be effected in so very small a space for the tools to work in.

The only objection to its use, appears to be the difficulty attendant upon passing the chain; this, however, is easily overcome by previous consideration of the relations of the parts and their anatomical configuration, which will enable the surgeon to perceive how to fashion his needles, and where to pass the chain, so as to avoid any difficulties. So far as I can judge from the operations in which I have seen it used on the living, and by employing it on the dead body, its application is extremely facile; it certainly was in this case.

The grounds that induced me to depart from the usual modes of opening the antrum by trephining, &c., were, that by the section I employed, the apex of the antrum being cut off, its cavity was at once and instantly exposed; and this section being effected by a chain saw, the time occupied in its performance was but momentary; and had any bleeding occurred at this time, which was the period at which it was to be feared, it would have been immediately arrested—a point in the procedure of great value, since by reason of her spanæmic condition, loss of blood was greatly to be dreaded. It is needless to say, that with the slow process of trephining, no such contingency could have been provided against.

I could not have adopted the *procédé* of Desault (*Œuvres Chirurgical*, vol. ii.)—viz., that of boring a hole into the antrum with a kind of punch, and enlarging it with a short curved knive (*instrument tranchant en forme serpette*)—because the walls were not, as in his case, thinned, to be able to be so cut.

In conclusion, I would remark, that notwithstanding the general interdiction of the use of chloroform (when first introduced), in great surgical operations about the jaws, owing to the supposition that blood

would get into the larynx, a more extended experience has proved its innocuousness and advantage; and its administration in all such cases, whether the patient be in the lying or in the sitting position, is found to be practically unattended by the disasters which it was formerly deemed would be the attendant consequences.

Birmingham, 1858.

CHEOPLASTIC DENTISTRY.

By J. M. Shepherd, M. D., D. D. S., Petersburg, Va.

From the American Journal of Dental Science.

Great and various have been the improvements in mechanical dentistry in the last twenty years, and no one of them has created or excited a more lively interest among the dental profession than that which heads this article. The strongest emotion excited seems to be that of surprise.

It is somewhat amusing to see the laborious manipulator in gold, straighten himself up at his bench to look at a piece of cheoplastic work. He lays down his hammer and takes up the piece, and his first inspection is made of the surface intended to fit the mouth. He finds here a perfect counterpart of the mouth, all the lines sharply drawn both in elevations and depressions. Here, says he, is a result I have not been able to reach by swaging, although I have laboured at it for years. He then turns the piece over to examine the other side; and here, he observes how beautifully the metal lies round the necks of the teeth; and how uniform and smooth the entire surface is without having had a tool upon it. He readily perceives, that a beautiful finish can be obtained with a small amount of labour and time—more beautiful than it is possible to get in gold. He gives the plate a twist to ascertain its stiffness, and though thin, he finds that it does not spring. "That's strong enough," says he. He then takes hold of the teeth and gives them a shake, in order to test their attachment to the metal, and here he finds the new process is as far superior to his work in gold as in any other point in which he has drawn a comparison. Push them as he will, they do not stir. On looking into the reason of this, he finds that the metal being cast to the tooth, instead of grinding the tooth to fit the metal, the fit is perfect; no

crevice, not the least, is to be found between the two, and, consequently, the tooth sets steadily on its base; that it is confined to its place by the same platina pin which he uses, or a groove in the porcelain into which the metal has flown, and in addition, there is a neat little strip of the same metal passing round and over the ends of the teeth where they terminate on the gum in a small groove made for the purpose, and which binds them with perfect security; a thing he has tried to do in gold a hundred times, but never succeeded to any valuable extent. He concludes on the whole, that the teeth are more securely bound to the metal, and more perfectly adapted to it than can be done in gold. He further notices, that no place is left for foreign deposits—that the piece may be worn any length of time, and when taken from the mouth, may be brushed clean in half a minute. This, though very desirable, is impossible in gold work. On further inspection, he perceives that there are all necessary facilities for filling out gaunt places in the alveoli, and that a regular and uniform set of teeth may be adapted to the most irregularly shaped gum. And then he remembers the trouble and vexation he has had in the springing of his plates; nothing of the sort in the nature of things can occur here; exactly as his model, so is his plate. And, further, it is manifest at a glance, that from the nature of the metal and the manner in which it is self-braced, that it is scarcely possible by use or accident to warp the plate at any future time.

After this close examination, he lays down the piece, and seems to want time to reflect. There is evidently a conflict in his mind, and he is not prepared to decide on the merits of the new process. He has already acknowledged that every essential point in the mechanical construction of a set of teeth has been achieved in a manner far beyond any process he has seen before. "But," says he, "can this metal be worn in the mouth with impunity." He reads the certificates of Dr. Bond and others, and finds his question answered in the affirmative. Now, he wishes to reflect again. His thoughts run thus—"If this metal is pure enough to be worn in the mouth, truly it is a marvellous discovery; and this is strong testimony on that point. Dr. Bond says he has worn plates of gold, silver, and platina, and that this is as pure as any of them. But, suppose this new process is adopted, what will be the result? why, it is so simple, that any one can do it; and the distinction which now exists between the skilful manipulator and the botch will be done away, and we shall all be brought down on a level. Why should I abandon that

which has cost me years of patient toil, and take position beside the man who never possessed industry or skill enough to put up a passable set of teeth?

I have thus stated the case, as I think, fairly, and will now present some facts in my own experience.

For more than twenty years I have been engaged in the practice of dentistry in both branches I have always done my own artificial work, having never been able to get any one to do it for me to my mind; and I have always felt the want of some process by which greater perfection, or a nearer approach to it could be attained. The double duty of the office and the laboratory, however, left me no time for experimenting with, or inventing improvements. Improvements were frequently announced, however, and I adopted them, generally without hesitation, if they appeared to be improvements. When Dr. John Allen's continuous gum came out, I was delighted with it, thinking from its looks it would stand the test; and if so, I saw that nearly all the points to which I have above referred, were most happily met. I soon found, however, that the material of which his gum was made was too frail, and would break, even when laid on so heavily as to render the piece objectionably clumsy. About this time, some one proposed block tin as a base for lower sets, and Dr. Hawes, of New York, published his method of constructing them. I adopted this, and so much was I pleased with it, that I have never put up lower sets in anything else, until the Cheoplastic process was developed by Dr. Blandy, of Baltimore. I had only one objection to block tin, and that was, it had not sufficient stiffness to admit of the use of gum teeth; and while the metallic gum could be hid in most mouths, in some it could not. But it made a more serviceable, easy, and perfect base, than anything else I had ever tried. But when Dr. Blandy called on me last April, and showed me his new process, and specimens of work, I saw at once that he had a metal free from the objection to block tin. I thought it at least as pure, and it could be used in the construction of upper sets as well as lower, and thus obviate the necessity to use two or more metals in the same mouth.

I did not hesitate, under these circumstances, to purchase an office right. Since that time, I have put in some dozen pieces, most of them being whole dentures, and, so far as my patients are concerned, I have not heard the first word of complaint, and not a piece has come back to be repaired. Except in tin base work, I have never

enjoyed so perfect an exemption from trouble with any style of work I have ever done. I am of course, therefore, highly pleased with the Cheoplastic process.

The objections which lie against the new process, I think, may all be answered with sound argument.

That the careless and unskilful will calculate to equal his former rival in gold work, is probable; but when he comes to make a comparison with well-finished pieces, he will find himself vastly mistaken. I do not recommend it on the score of its simplicity; my experience with it is, that more skill, if possible, is requisite to compass all the ends practicable in this style of work, than in gold. The effect of nicety is not seen until the piece is cast, and then, if defective, it must remain so. The most perfect nicety is requisite in fitting and arranging, in order to get out a handsome piece, or a piece that can be made handsome by finishing. But there is no style of work with which I am acquainted that responds so amply to the skill of the manipulator as does this. He fails in nothing for which he labours; his highest aims are fully and perfectly met. But it requires skill of the most superior order to bring out the best results.

It is probable, that the greatest difficulty on the minds of the profession in reference to Cheoplasty, will be the metal itself. The quality of metal for all dental purposes has rightly claimed the attention of all well-instructed dentists. Tin foil was extensively used in filling teeth twenty years ago, and from the fact that it was found to corrode in some localities of some mouths, it was discarded from the operating cases of most of the profession. But it must be borne in mind, that there is a wide difference between a filling in a tooth, and a piece of the metal cast in a solid mass. The filling, moreover, is stationary in the mouth and may be neglected, while artificial teeth are removed and cleansed at pleasure. It is known to all who have been many years in practice, that a filling of tin foil will last indefinitely in a healthy mouth, and preserve the tooth from decay too, if kept clean. I have at least two tin fillings in my own teeth, that were put in by my dental preceptor twenty-two years ago; and the teeth are perfectly preserved, although they were in an advanced stage of decay when they were filled. The patentee has wisely withheld from his patrons the formula by which his metal is compounded; and I think the reason which he assigns is satisfactory—that the metal would almost cer-

tainly degenerate if indiscriminately compounded. But I am willing to believe, that it is at least as pure as block tin; and if so, time has already proved to me that it may be worn in the mouth with impunity.

There is, however, a charm about gold which it is hard to dispel; and I confess, if gold could be cast, or wrought by any other means, so as to meet the requirements as this new metal does, I would use it in preference, not because I think it would be intrinsically better, but because there would be no objections to combat in the use of it. In order to meet this fancy for gold so far, I have gilded all my pieces. It may be an intrinsic advantage—I am sure it does no harm, and it makes a piece look better, and my patients like it better. Gilding is a simple process, and may be done by any dentist in his own laboratory, with a small outlay of time and money.

Some difficulty has been experienced in the want of a proper style of teeth for the new process. While the ordinary teeth may be used with facility, they do not fulfil all the requirements. Several styles have been brought out, but I have succeeded best with a tooth made from my own model, by Messrs. Orum & Armstrong, of Philadelphia. They are, or soon will be, prepared to fill orders. No doubt there will soon be in the market a good supply of various styles to suit all fancies.

There is one objection in the minds of many excellent men in the profession, to which I have not referred; they are opposed to professional patents. Well, so am I, as a principle. But I have always adopted the improvements, without stopping to discuss the question of propriety in relation to such patents. The improvements are essential to me, and if I cannot get them without paying the fee of the patentee, I pay the fee, and discuss the other question afterwards.

I have thus written in order to direct the attention of my professional brethren, if possible, more directly to this, as I esteem it, great improvement in artificial dentistry. I am so well satisfied that it is not one of those discoveries which only attract to deceive, but will stand the test of time, and become the prevailing mode of mounting teeth, that I am willing to give it my sanction before the profession, as well as in my laboratory.

OBSCURE DIAGNOSIS OF TOOTHACH.

A correspondent in the "DENTAL NEWS LETTER," under the cognomen of initials "J. D. W.," says upon this subject:—There is no more reason why a tooth should ache without sufficient cause, than one of the fingers of the hand should be cause of pain while in a normal state. When a patient complains of pain in the jaw, temple, or over the whole side of the head and face, and there is no discernible disease of the parts, it is fair to presume, that it is caused by a tooth. Without going into a long description of the various causes of toothach, or pathological conditions of parts, inducing pain, the citation of a few cases may be of use to the young practitioner. A lady of fifty years of age, in general good health, called to see us about pain in her face, by which she had been suffering more or less for four weeks. She had called on a dentist near her residence to save time; she referred the pain to the left inferior bicuspids, both of which were considerably worn; the dentist could not discover in them sufficient cause of suffering, but plugged a small crevice in the second one, about as large as a small pin's head. The pain, however, continued the same; they were examined several times, with no better success; the patient applied to us, stated her case; we examined the teeth and found them as before stated, considerably worn; the first one the most; and in passing a fine-pointed probe over the worn surface of it, we found a small opening, and the pulp partly dead: we opened the cavity freely, and cured the case.

A gentleman called to see us, suffering pain along the inferior maxillary; there was no swelling of the parts; the pain had been endured about one week; he always referred it to the inferior maxillary and the wisdom tooth, second bicuspid, and space between them, as the first and second molars had been extracted for some years. The wisdom tooth had a large plug in it, which was removed by his dentist, to ascertain whether it was a cause of pain; but it was not found to be, the bicuspid was entirely sound. His dentist not being able to discover any cause of pain, the patient called to see us: we found a very small orifice in the gum, which opened to a remnant of a root, which had been left about three years before; this was extracted, and the case cured.

A gentleman of nervous temperament was attacked with pain in the head and face, principally the left side; he sent for his medical adviser: he diagnosed it as a case of neuralgia, for which he employed

narcotics, chloroform, ether, leeches, purgatives, &c., but all to no purpose. After treating the patient for about one week, during which time he grew much worse, the whole nervous system seemed to become involved; he was at times speechless, he could not swallow his food—he would start off and run across the room involuntarily, if spoken to, or drop down upon his knees, and perform various gyrations, as if crazed. He never complained of his teeth in the least; but his medical adviser called upon us, to know if we would examine the case for him, as the patient grew worse under his treatment. We found that a front tooth had been plugged about a month, but had given no pain at the time; we, however, removed the plug, and found that it had been plugged over the nerve. The tooth bled, and the patient was at once relieved, but did not recover from the nervous excitement for some days. It was the most extraordinary case of suffering we ever witnessed. When pain follows shortly after plugging a tooth, although no pain was experienced at the time, we regard it with suspicion, and remove the plug. In this case, the nerves of motion, as well as the nerves of general sensibility, were seriously involved.

A SIMPLE METHOD OF OVERCOMING A DIFFICULTY.

Mr. Arthur in the *Dental News Letter*, upon this subject, says—

In filling teeth, a very difficult part of the operation is to keep the moisture away from the cavity. There are some cases, in which the secretion of saliva is so great, that it is impossible to prevent the cavity from being overflowed, and we are obliged to do the best we can under the circumstances; these are extreme cases, however; by making use of the right means, and with care, we are usually able to keep the saliva from interfering with the operation. But where the cavity to be filled is situated on the proximate surface of a tooth, near the gum, the great obstacle in the way of a good operation, when "annealed gold" is used, is the secretion of mucus. In some cases, too, the gum projects slightly into the cavity, and in the course of preparation, may have been slightly wounded so as to bleed easily.

Several methods have been suggested to overcome this difficulty. A wedge of wood, in cases where it is admissible, is sometimes thrust between the teeth, so as to force the gum out of the way, and

so compress it as to stop, for the time, the secretion of mucus, and the bleeding. Where this cannot be done, the gum is sometimes touched with nitrate of silver, or chloride of zinc, and the natural action of the vessels suspended for the time. Dr. Jack proposed and practised, he states, with satisfaction, packing a very small piece of bibulous paper under the free edge of the gum.

A very simple method has lately suggested itself to me, which I have put into practice with so much satisfaction that I communicate it. I have at hand a number of the india-rubber tubes used for regulating the teeth, of several sizes. From one of these I cut off a small ring, taking the sized tube suitable for the case in hand. This ring is passed around the tooth to be filled, embracing it alone or several others if necessary; it may be brought up against the gum with so much force as to press it out of the way, if it projects into the cavity, and to compress it so as completely to stop the mucous secretion, or any slight bleeding. The use of this appliance for the purpose proposed in so simple as to require no further explanation. It is only necessary to try it to be convinced of its value.

FACIAL AND DENTAL NEURALGIAS.

Dr. Michael Andre recommends the following mixture for prompt relief: Extracts of Opium, of Belladonna and of Stramonia, each one part: Laurel Water, twelve parts. A few drops are placed in the meatus auditorius, and cotton is placed in the passage, taking the precaution to hold the head on the opposite side for a few moments, that the fluid may pass freely into the canal.—*Revue Therapeutique.*

COMPLETE SECTION OF THE LOWER LIP,

By being caught between the two jaws; fracture of several teeth, displacement of others.—Translated from "*L'Art Dentaire.*"

On the night of Thursday the 2nd of April 1857, during the voyage from Civita Vecchia to Naples, Lewis, aged 23, the first stoker of the steamer "L'Aventin," was about to grease the joint of the great piston, when, either from carelessness, or the movement of the ship, he was violently struck on the top of the head, by the handle

of the piston in its descent. Happily when he found himself struck, he had the presence of mind to bow his head, otherwise the skull would have been beaten in like an egg-shell, by the force of a machine of 160 horse power. In rapidly and violently lowering his head, his chin was suddenly struck against the sternum, and the lower lip being between the two jaws, a piece two inches long, was as cleanly cut out as if done with a razor; several of the teeth were broken, and others very much displaced. The wound at the top of the head was about an inch and three quarters long, and a clean cut. I shaved the hair off, made three sutures, and bound it up with strapping. The patient was bled, and a mustard bath applied to the feet. I placed on the wound on the mouth, a small compress dipped in cold water, which was renewed as often as it became in the slightest degree warm. The next morning I obtained at Naples, an invalid's bottle; by means of which, Lewis could swallow some barley water sweetened with honey, as well as a little broth, but without making the slightest effort; so that the twisted sutures were pulled on as little as possible.

The third day, the wound on the head was completely united, without a trace of suppuration.

The fourth day I removed the sutures from the mouth, the union was complete, and the cicatrice *linear*. The patient could now easily open the mouth, and I proceeded to examine the teeth and gums; I found the latter *fungous*, white, flabby, and much engorged, and forming a moveable cushion round the alveoli. The canine and first bicuspid on the left side of the upper jaw were broken off, the stumps were blackened and loose, I removed them with the forceps. The teeth which had not been broken were pushed out of the proper places by the shock. I ordered the patient frequent lotions of thickened marsh-mallow water, to abate the inflammation; in a few days this had completely passed away; but the fungoid state of the gums still remaining, I ordered lotions of the decoction of bark. To restore the teeth to their original position, I advised Lewis to perform, thirty or forty times a day, a kind of dental gymnastic, by pushing gently with his tongue the displaced teeth towards their proper places, and thus by degrees to restore them to their normal position. The patient being very intelligent, did exactly as desired him, and I had the pleasure, in a few days, of seeing the teeth in their natural places; the gums adhering firmly to the alveoli, and again recovering their natural rosy hue, under the action of the bark. On the 14th April, I perceived above the right upper canine a little white speck; I made

an incision with a bistoury, and found the root of the tooth which had been broken at the neck. I immediately extracted it and continued the bark lotion.

On the 18th April, sixteen days after the accident, the patient was completely cured, and presented the following appearance:—

The lower lip is as thin as the upper, all trace of the former swelling has disappeared, and the cicatrice is scarcely perceptible. There are five teeth wanting; viz., in the upper jaw the two canines, and the first left bicuspid; in the lower, the first incisor, and canine on the right. All the other teeth are in their natural position, the gums are firm, and of a healthy red colour,

Lewis can eat solid food, and masticate without pain or difficulty.

TEMPORARY SETS.

From the *Dental News Letter*, January 1858.

It has become a practice with many dentists to supply their patrons with a temporary set of teeth, while the gums and alveolar are changing into a permanent condition suitable for a permanent one.

Two reasons are given for this course—first, to gratify their patients; second, the more perfect preservation of the expression of the mouth and face. Is the latter reason, practically speaking, true? Will not the change be greater at the end of five years, than if the old practice be followed, of giving six months or a year for the mouth to prepare itself for the reception of a permanent set of teeth? From my limited experience, whenever a temporary set has been supplied, the change in the jaw has not been so great during the first year, but has continued to change for a number of years; so that, ultimately, the loss has been greater, and the change of expression greater.

There is also another objection. A plate put into the mouth over unhealed gums, prevents healthy action, and keeps them in a soft and spongy condition, unsuited for a basis for a permanent and useful set of teeth.

If it be true that temporary sets be a permanent injury to the jaw, they should be immediately abandoned; so that the unfortunate victim to artificial teeth shall not suffer a permanent injury from wrong advice. T. H. B.

Portland, December 17, 1857.

MEDULLARY CANCER OF A GIRL'S JAW.

We were present on January 12th at the Westminster Hospital, when Mr. Holt removed some malignant disease from the jaw of a girl, which he had at first contemplated removing entirely. The particulars are as follow :—

A young woman, aged eighteen, was admitted on January 7th, with fungoid protrusion from about the angle of the right jaw, of ten weeks' duration only. The disease was not for the first month attended with pain, but for the last six weeks, she experienced slight pain radiating to the symphysis, more particularly at night; but rest was always obtained by one-third of a grain of morphia. Her attention was first directed to it by a small portion, apparently from the cheek, getting between the teeth. On examination, a soft fungoid mass was detected covering the molar teeth, and extending across the tongue. It apparently sprung from the angle or base of the ascending ramus, and had pushed the mucous covering before it. The molar teeth were firmly fixed in their sockets; the wisdom tooth was covered with gum. The rapid growth of the fungus, and the absence of any material pain, led to the conclusion that it was probably a form of epulis, either growing rapidly from interruption to the returning circulation, or of a malignant type. Mr. Holt, therefore, thought it more advisable to remove the whole mass, and examine the bone prior to removal of the jaw itself. The patient being thoroughly under the influence of chloroform, Mr. Clendon wedged open the mouth, and Mr. Holt made an incision through the reflected mucous membrane on the outer side of the jaw, and through the base of the tumour to the bone. A similar proceeding was adopted on the inner side, and the whole of the mass removed. Its attachments were now found to be connected with the posterior part of the body and anterior part of the ascending ramus, the bone being hard and of its ordinary density. As the patient was somewhat debilitated, of a dwarfish stature, and strumous habits, Mr. Holt did not feel warranted in doing that which he was prepared to do—namely, remove the bone at its articulation at this time, but preferred removing with the cutting pliers all the bone to which the growth had been attached. Mr. Clendon having then removed the molars and wisdom tooth, Mr. Holt cut through half the thickness of the jaw corresponding to those teeth, and, going further back, removed the coronoid process, with more than half of the sigmoid notch. The disease was found to be intimately connected

with the periosteum, which readily peeled off, leaving the bone somewhat roughened. It seemed uncertain whether the tumour was developed from the periosteum or external to it; at any rate, subsequent careful examination by Mr. Brooke confirmed its cancerous nature, and we think Mr. Holt acted wisely in not removing the jaw under the circumstances.—*Lancet.*

CEMENTS FOR STOPPING THE TEETH.

M. Vagner recommends the following:—A drachm of gutta percha, softened by hot water, is to be worked up with catechu powder and tannic acid, of each half a drachm, and with a drop of essential oil. For use, a morsel is to be softened over the flame of a spirit lamp, introduced while warm into the cavity of the tooth, and adapted properly. The mass becomes hardened, and even after several months, exhibits no trace of decomposition. M. Pouton states that we may also obtain an excellent cement by dissolving one part of mastic in two of collodion. Having well dried out the cavity, a small ball of cotton, soaked in some drops of the solution, is to be introduced. It soon solidifies, and may remain *in situ*, seeming also to exert an influence on the further progress of the caries. *Rev. Med.* —*Braith's. Ret.*

DEATH FROM CHLOROFORM.

We find the following in the *Courier* of Tuesday last:—A young lady named Packard, died at Salmon Falls, on Tuesday last, by taking chloroform. She called at the office of Dr. Severance, to have a tooth extracted, and while the doctor was absent from the room she used the chloroform, and when he returned he found her dying. Whether she took it purposely or ignorantly is unknown.—*Boston Med. and Surg. Jour.*

CHEMISTRY.

Adulteration of Chloroform.—It is to be deplored that a substance of so much value as Chloroform should, in many instances, be rendered positively dangerous, or even fatal, by carelessness in its fabrication, owing to which, impurities, that might be easily avoid-

ed in the first instance, or subsequently removed, are suffered to contaminate it, sometimes to such an extent as to render it either inefficacious for good, or positively poisonous when administered.

The Foreign ingredients most frequently met with, are alcohol, aldehyde, hydrochloric, and hypochlorous acids, and some of the compounds of methyl. The latter are exceedingly poisonous in their action; and further, there is no ready means of discovering their presence, or of freeing chloroform from them. Alcohol may be detected, by adding one or two crystals of chromic acid to two drachms of the suspected liquid; should it be present, the chromic acid is soon reduced to the state of the green sesquioxide of chromium. The same result is obtained by adding a little bichromate of potassa and sulphuric acid, instead of the chromic acid. Aldehyde is recognised by its reducing action on the hydrated oxide of silver, and by its rendering *aqua potassæ* of a brown colour when heated with it. This body does not occasion any injurious influence when inhaled with the chloroform, but it is likely to be converted in the system into ascetic acid, which is a slight stimulant.

Hydrochloric acid is a very common impurity in chloroform, and often exists in it to a very considerable extent. That containing this acid has often an irritating odour; it reddens litmus paper, and affords, when shaken with a solution of nitrate of silver, a white precipitate.

Hypochlorous acid may be recognised by its odour, as also by its reddening, and then partially bleaching, a piece of litmus paper.

Compounds of Methyl. It is to be regretted, says Normandy, that these dangerous substances cannot very readily be detected. One of the best criterions of their presence is the effect they produce upon the organism. They occasion a peculiar throbbing headach, and a rapid prostration of the vital powers. These symptoms may often be observed when the chloroform is only inhaled for a short time; and there can be no doubt that they are very often the cause of discomfort, so often resulting from the use of certain samples of this anæsthetic. These impurities may be got rid of in the following way:—Wash the chloroform three or four times with its own bulk of water, decant the latter carefully after each operation, then introduce it into a retort with four or five times its weight of powdered quicklime, and carefully distil in a water bath. The resulting product will generally be found quite pure.—*Dr. Muspratt's Chemistry: theoretical, practical, and analytical.*

ETHER *versus* CHLOROFORM.—Professor Barrier, of Lyons, has published, in the *Gazette Médicale de Lyon*, August 15th, 1857, an able article, wherein he contends that ether should be used in preference to chloroform as an anæsthetic. He concludes by propounding the following opinions :—

" 1. When death is instantaneous, it must be the result of an idiosyncrasy, which contributes in rendering the prostration of the nervous system more rapid and complete ; hence fatal syncope.

2. As ether acts less powerfully and quickly than chloroform, it exposes patients less frequently to that instantaneous prostration.

3. If asphyxia can be looked upon as one of the causes of death under anæsthetics, it may be easily prevented, when it arises from an imperfect mode of inhalation, which does not allow a sufficient amount of air to enter the chest.

4. If death, on the other hand, is the consequence of protracted anæsthesia, the latter is of course the more dangerous in proportion to the rapidity of action of the anæsthetic agent.

5. Ether is to be preferred to chloroform, because it is less dangerous, and that the few disadvantages attributed to that agent, are of too secondary a character to cause its use to be given up in operative surgery."

That the data as to the number of deaths by chloroform must be very incomplete, is proved by a fact stated in the above-mentioned article. M. Barrier states that five deaths from inhalations of chloroform have, to his knowledge, taken place at Lyons, and that one only has been published.

ELECTRIC GILDING, SILVERING, AND PLATINATING.—" M. Landois, of Paris, announced to the Society for the Encouragement of National Industry, at their session of 25th December 1855, that he had obtained a gold, silver, and platina bath, having no deleterious exhalation, and capable of depositing solid coating upon the metals. M. L. dissolves a given weight of cyanide of gold, silver, or platina, in a saturated solution of common salt ; the solution is filtered, and may then be used. The galvanic deposit takes place cold very rapidly, and the results are equal to those obtained by MM. Ruotz and Elkington."—*Jour. Franklin Institute.*

BOSTON MEDICAL LIBRARY 20 1907

COLLEGE OF DENTISTS.

MONTHLY MEETING, JANUARY 5, 1858.

The Fourth Ordinary Meeting of the Second Session was held this evening, the President in the Chair.

The following gentlemen were duly elected Members, and Associates of the College :—

MEMBERS.

A. Alabone, Esq.	Newport, Isle of Wight
J. L. Alldridge, Esq.	Portsmouth
J. H. Atkinson, Esq. ..	Leeds
C. Barrow, Esq.	Stockport
E. Bevers, Esq.	Oxford
H. Bower, Esq.	Sheffield
W. D. J. Brenneis, Esq. ..	Henrietta Street. W.
W. Buckell, Esq.	Salisbury
J. Burley, Esq.	Halifax
C. Carter, Esq.	Grosvenor Street. W.
W. Chapman, Esq.	Maddox Street. W.
J. Corbett, Esq.	Cork
C. H. Crowther, Esq. ..	Wakefield
G. Cussons, Esq.	York
R. C. Drabble, Esq.	Sheffield
T. Evans, Esq.	Tenby
J. H. Fergusson, Esq. ..	Sligo, Ireland
S. Fowell, Esq	New Bond Street. W.
J. G. Gamble, Esq.	Stratford-on-Avon
R. Ganthony, Esq.	Liverpool
R. B. Garnett, Esq.	Huddersfield
H. J. Garnet, Esq.	Sheffield
W. J. Gilbert, Esq.	Old Quebec Street. W.
D. Gillies, Esq.	Londonderry
W. Grant, Esq.	Inverness
A. Gunton, Esq.	Norwich
G. Harding, Esq.	Chichester
J. W. Heath, Esq.	Richmond

T. M. Holmes, Esq. .. Hull
J. A. Hughes, Esq. .. .. Birkenhead
A. Jepson, Esq. .. .. Gainsborough
H. M. Jones, Esq. .. .. Swansea
R. Marks, Esq. .. .. Hull
H. F. Moore, Esq. .. .. Liverpool
G. Mosely, Esq. .. .. Sheffield
J. Newman, Esq. .. .. Liverpool
— Norman, Esq. .. .. Australia
W. P. Porter, Esq. .. .. Finsbury Place. E. C.
E. B. Randell, Esq. .. .. Portsmouth
A. J. Robinson, Esq. .. .. Grosvenor Street. W.
H. B. Rodway, Esq. .. Torquay
J. Scholefield, Esq. .. .. Huddersfield
F. J. Sims, Esq. .. .. Birmingham
J. McQ. Slater, Esq. .. .. Hanley, Staffordshire
H. C. Stokes, Esq. .. .. Newcastle-on-Tyne
A. Styer, Esq. .. .. .. Northampton
J. G. Surenne, Esq. .. .. Edinburgh
G. J. Sylvester, Esq. .. .. Worcester
W. R. Tuck, Esq. .. .. Camborne, Cornwall
G. Weaver, Esq. .. .. South Molton Street. W.
J. Wicks, Esq. .. .. Edinburgh
H. J. Wigmore, Esq. .. .. Wisbeach
W. J. Wilton, Esq. .. .. Sunderland
— Fay, Esq. .. .. .. Liverpool

ASSOCIATES.

G. F. Bowden, Esq. .. .. Charles Street. W.
J. L. Cafferata, Esq. .. Sunderland
B. E. Campbell, Esq. .. .. Brighton
T. Davis, Esq. .. .. Hull
J. E. Durander, Esq. .. .. Liverpool
J. Grant, Esq. .. .. Waterford
C. King, Esq. .. .. .. Hammersmith
A. Newman, Esq. .. .. Liverpool
H. Newman, Esq. .. .. Liverpool
W. Wilmore, Esq. .. .. Edinburgh
H. White, Esq. .. .. .. Lincoln

Museum and Library Report.

The following is a list of articles which have been presented to the Museum and Library of the College of Dentists, since the last Report in December 1857 :—

Museum Report, January 5, 1858.

The following articles have been presented since the last report, December 1, 1857 :—

A model of Furnace for melting, and backing Teeth.—Presented by Dr. Roberts, of Edinburgh.

Specimens of Teeth made in Dr. Roberts's furnace.—Presented by Dr. Roberts, of Edinburgh.

Model of a new method of articulating bites.—Presented by Dr. Roberts, of Edinburgh.

Specimens of a new temporary stopping.—Invented and presented by Dr. Roberts, of Edinburgh.

Model of an Apparatus for restamping bent plates.—Presented by R. Thomson, Esq., Camberwell.

Model of an Upper Jaw, with the arch perfect in shape, but minus the bicuspids.—Presented by A. Hockley, Esq.

Charles James Fox,
Hon. Librarian and Curator.

Mr. Charles Rogers then read the following paper on Pivoting :—

Mr. President and Gentlemen.—The subject of my paper having been so recently before you, I must ask your indulgence for opening anew the discussion, especially after the able paper then read by the author, Mr. Perkins, who entered so fully into the operation for pivoting, as generally practised. There were points of detail, however, that appeared to me to bear further inquiry, and which, I hope and believe, will excite your interest.

This method of replacing teeth stands foremost, on account of its neatness and comfort, of all other contrivances for artificial teeth ; but beyond that, when required in the mouths of youth, it becomes imperative that every effort should be used to avoid gold frames, which all must have observed as being so prejudicial in mouths up to thirty

or forty years of age, and indeed sometimes after that. While, no doubt, many will agree with me as to the extent to which the operation may be carried, I say it advisedly, that pivoting is not valued, or practised, generally to the extent that appears to me possible; to illustrate which remark I will mention two cases:—The first was a young married lady, age about twenty, having the two central incisors much disfigured towards the points by dark decay. She applied to one of the leading practitioners at this end of London, who proposed their removal, and thereupon took the mould of the mouth, intending at the removal of the teeth to insert the frame. In the meantime, on a visit to her mother, who had teeth pivoted by me then existing, she was directed to me, when I instantly proceeded to operate; and after destroying the nerves, secured, at that sitting, two mineral crowns on the perfectly-healthy roots. That was four years since. She has been absent from England; but I have heard this last summer of their being secure and comfortable, and no doubt the rest of the teeth are all the better for being without the frame. The second case, but recently in my hands, was a young lady, age about twenty-five, who lost the points of two central incisors by a blow, while a child eleven years of age, exposing the nerves: being taken to an eminent west-end dentist, in great suffering, he refused to do anything, and she has remained so disfigured till this autumn. Although, as you may imagine, the roots were very open and softened, I succeeded in fixing the two mineral crowns. I believe, with watching annually, they will last some years.

These and other cases have induced me to think, that older practitioners, who with great employment and success in other operations, have refused to give attention to what appeared perhaps a doubtful operation, it remains for us juniors, as most of us are, having more time, so to elaborate the process as to bring it beyond the realm of doubt. It happens also, that the public is somewhat prejudiced against the operation. An untoward case of alveolar abscess, with febrile disturbance, brings it under the notice of the medical man, who immediately denounces that method of fixing teeth—his opinion flies through the family and general circle—hence the prejudice; while we know, that for one such instance, hundreds of successful pivoted teeth exist, known only to the owners themselves. The value which patients set upon their pivoted teeth, heightens the operation in my mind, being frequently requested, while adapting a frame for grinders, to leave the

pivoted teeth in front. I can recall several instances of such arrangement, and no doubt many members can do the same.

The first aim of the patient is ornament, which, to the practitioner, is of secondary importance, as compared with the difficulties of fitting and fixing, which seem to require the same precautions as for stopping. The operation of pivoting embraces the incisors, cuspids, and bi-cuspids, ten teeth in each jaw. Where the mouth is small, there is difficulty in reaching the second bicuspid, and occasionally has to be relinquished. The lower teeth are not so easily reached as the upper, but by operating from behind, the difficulty is not great, except where the teeth slant inwards.

I will first take the treatment of dead roots, very much softened, where irritation exists, or where abscess has occurred. If time permits, the root should be cleared of soft matter and moisture, then dressed with creosote, to the extremity, and plugged with cotton and mastic, and left for two or three days, in the same manner that any tooth would be managed under similar circumstances, previous to stopping; after which, the root should be filed down beyond the gum, and the new crown adjusted; and, if time still permits, it should be lightly fixed with a temporary pivot. My object is to avoid irritation and abscess, which you will all, I am sure, admit is the great opprobium of the operation. I then clear out the root to the full extent of the soft bone, with the object of screwing in a gold tube, the centre being the size for taking the pivot of the tube mineral tooth. Gold tubes may be kept of various thicknesses, from which, after tapping, a piece of the length required, should be cut with a notch made by the saw, in order to fix the turn-screw in, with which it may be gradually worked up into the root and fixed. It is well to cut the screw in the root with water, after which it should be dried out with cotton and chloroform, and the screw finally secured with solution of gutta percha. In cases where the softening forms a large open mouth to the roots, a larger tube should be fitted to extend half way, or as may appear necessary; or if not extending far, the small tube may be fixed, and then plugged round with gold foil. Platinum for the screw tubes, when required large, I prefer; and might be used with advantage for any size, in producing less destructive action on the dentine; the want of firmness in screwing might be remedied by holding it on a wire. It will occur to all that the tube should be slightly tapered before worming, with three or four facets filed on the end, that the root may be tapped, or cut, without the risk of splitting,

and which tapering will balance the extra enlargement that obtains in working the screw into its place.

The suggestion of the screw tube I found some years back in the American Journal; since which time, although reading that work regularly, I have not seen any mention at their society meetings of its being used; indeed, the pivot does not appear to be in much favour across the Atlantic, except when made of hickory; for which reason, I imagine, the operation is regarded as of a merely temporary nature. A good description is also given in Harris's Dictionary of Dental Science, a most useful aid to beginners.

The treatment of roots, with life, or the nerve existing, I find a much simpler and speedier process. When much substance of crown remains, the saw should be used on both sides, commencing as high as the process of gum permits, and carried as far into the tooth as possible, cutting diagonally, that the central cavity may be sooner reached; having cut a quarter of diameter either side, the excising forceps should be used, when a little effort will complete the removal; by this means as great length of root is retained as possible, with the means of forming it to the arch of gum which retains that appearance longer than by excising the crown at once, high up under the gum.

This latter method, although recommending itself to many on account of the saving of time, appears to me to have some grave objections. There is much risk of splintering—the shock is severe to the patient and dangerous to the alveolus—the root is much shortened, as the instrument must be slipped over the enamel, which in young mouths is some distance beyond the edge of gum; we thus lose the power of forming the root with the round file, a most important part of the after-adjustment of the new crown. The nerve has then to be got rid of, which, if the opening is sufficient, can be done by passing a fine watch-maker's broach carefully by its side, giving as little pain to the patient as possible; when near or at the end a sharp turn or two will cut it off; a little nitric acid on the fine broach will then finish its destruction. The root should be formed with the stump file filing a little beyond the edge of gum, which, when the crown is fixed, after a few days, grows down, completely hiding the union. Where the channel is small to admit of drilling out, sometimes the tube may be dispensed with, until from the loosening of the pivot it should be required; but I am inclined to use the screwed tube always for the six upper centrals, as when fresh and sound but a thin tube would be wanted.

This operation on fresh roots, as I observed, is much simpler than where they are decayed, from the circumstance that one sitting completes it; in the same way that a molar tooth can have the nerve destroyed by acid, or other means, as the electric cautery, and stopped at the same sitting. Where arsenic, or zinc is used, of course irritation being set up in the socket, such hurried procedure would be injudicious. I have not tried the electric cautery, but believing in its power, I mention that with other agents, but find much success with the needle broach, of course softened. As I know some doubt is felt as to the advisability of fixing the pivot at the same sitting, after destroying the nerve, I wish to state, that such is my invariable practice, without witnessing the least trouble from inflammation. I suppose the vessel heals by what the surgeon calls first-intention, as in many operations even on the surface.

The parallel form of the tube or root-channel, should be kept as nearly as possible with the pivot, in order that an equal holding may exist the entire length—the broaches made for this purpose are ground of the reverse form to those used for enlarging drillings in plates, &c., some are made perfectly parallel, but those are best having the smallest part near the handle; as the point only cuts its way, there is tolerable certainty of this result. In observing old loosened pivots, the tapered form struck me as being some cause of their giving way.

For years past, I have admired the box-nails used on the Continent, and no doubt many here have tried their skill in opening the fig boxes so plentiful just now; of course, perceiving that if the nails are drawn they hold to the very point, our tapered pins reui rng many more to effect equal holding; we, as a nation, are considered highly practical, but in this little matter must succumb to poor fig-growing benighted Turkey. A tapered pivot is usually formed and recommended by all writers on the subject. When the attempt is made to remove, a little loosening will bring it away, just as the English nail comes from the wood, while I find the carefully adjusted parallel wire hold with equal pressure from end to end. With the screwed tube broached, as described, and pivot fitting, little more than roughing is required to fix; if any, thin gold foil, with the solution of gutta percha, is quite sufficient to secure it for years. Pivoting the bicuspids is a somewhat longer operation, arising from their position, and also from requiring two pivots, the roots being usually shorter than the centrals. I invariably use natural teeth, not yet obtaining

minerals of the required form or strength; the crown should be selected having both channels agreeing with those in the roots; after being fitted with a trial pin, the pivot should be adjusted to the outer root, of hard gold, after which a pivot of platinum should be used for the inner root, so that although the channels diverge, the crown is kept in proper position by the hardest metal. The roots of these teeth do not diverge as a rule, having examples to the contrary, while they often have length quite equal to the lateral incisors; neither is the outer root always the largest, as, when that is divided into two, giving three roots to a tooth, in that case, of course the inner one is the main hold—these are exceptions. I think it will be obvious to all, that effort should be made to fix these teeth with two pivots, because of the greater pressure during mastication, as well as the general shortness of pivot, as compared with the front teeth. In fixing, I invariably use gold foil, and adjust a tooth-brush handle, or piece of wood, to each tooth to be fixed, in order that the pressure may be exact and sure. The easiest and cleanest manner of fitting the crowns in all cases, is by means of a fine-pointed searcher, bent at a right-angle; with the aid also of the mouth-mirror inside; a more certain adjustment follows than with colour, which becomes mixed with the mucous issuing from the gum, and sometimes with the saliva, unless the operator be sufficiently quick to prevent it.

I trust, that any weariness that may have been produced by the length of these remarks will be compensated for by the discussion and corrections of those better able, but not more anxious, for our mutual improvement than myself, in drawing your attention to the operation of pivoting.

DISCUSSION.

The President.—Have you used hickory in pivoting?

Mr. Rogers.—Yes; but I do not consider it always to be depended upon.

Mr. Lintott.—As Mr. Rogers has given us a so lucid and interesting a paper concerning pivoting in the mechanical aspect, I should very much like to hear his opinion as to the pathological results.

Mr. Thomson enquired, whether Mr. Rogers considered it a safe

and generally successful operation to pivot four or five teeth at one sitting?

Mr. Mackenzie said, he gathered from Mr. Rogers's paper, that pivoting was more successful in young teeth than in old; and alluded to the difficulty experienced when attempting to pivot solid roots. It was his opinion, that the cementum was not able to withstand the absorption consequent on pressure, which gold pivots entail, and preferred wood, from its being softer and therefore more congenial.

Mr. Hepburn said, he had met with cases where teeth, which were very hollow, had to be pivoted, and his plan was to excavate as freely as possible, and then fill the cavity with Sullivan's cement, adapting a platinum instead of a gold pin; by this means he had been able to obtain a considerable firmness in the pivoted crown.

Mr. Mackenzie would prefer the insertion of a tube instead of a simple pivot in such cases.

Mr. Fox inserted a gold tube, and stopped the surrounding cavity with gold.

Mr. Harley had used tin-foil in similar cases, but used a steel pin for effecting the cavity.

Mr. Perkins recollected a case of "despair," where he had filled with gutta percha, and thought Mr. Hepburn's idea appropriate in such instances, although he would have discarded the use of a metal pivot.

Mr. Harley considered pivoting, as a general rule, bad; remarking that Mr. Nasmyth's practice was to remove all stumps, a course with which he quite agreed.

Mr. Harding could not agree with Mr. Harley; he considered pivoting a necessary and excellent plan.

Mr. Ghrimes held, that pivoting was a most useful method of adapting artificial teeth, and compared a case which had lasted twenty years, with the results which would have taken place had the same tooth been fitted by means of the ordinary plate. He thought hickory a good basis, and usually drilled through it into the sound dentine, using the ordinary broach for that purpose; but as a rule, he did not consider it safe to pivot bicuspids.

Mr. D. Hepburn liked the screw pivot in ordinary cases, although it was impracticable to say what was to be the general rule of action. He feared a great difficulty existed in pivoting bicuspids, and remarked upon the small number of pivoting cases arising in ordinary practice.

Mr. Purland pivoted as many teeth as he could, considering it, as he did, the most elegant method of adjusting artificial teeth, and therefore strongly recommended its adoption by all young students.

Mr. Bennett offered some very practical remarks on the adaptation of the screw tube, and inquired whether any irritation was likely to arise from the tightness of its fitting.

Mr. Mackenzie considered that no pressure from within would produce inflammation of the peridental membrane.

Mr. A. Hill said that he had been led to adopt Mr. Rogers's plan of pivoting bicuspids, from the remarks that gentleman had made on a former occasion, and he was happy to say with complete success. He very much preferred the broad pointed broach, as it enabled the operator to secure a cavity of equal dimensions throughout by the allowance of its form for lateral motion. He trusted that other gentlemen would also make trial of pivoting bicuspids.

Mr. Owen described the kind of drill which he used in pivoting. It was formed from a suitable piece of round steel wire, ground half away.

Mr. Hoole asked whether Mr. Rogers had found it desirable to try the capillary tube as recommended by Dr. Coglan?

After a little casual conversation, the President called upon Mr. Rogers to reply.

Mr. Rogers, in replying, remarked, in reference to Mr. Lintott's enquiry, that in pivoting roots the pathological condition of surrounding parts should be considered. He had observed in his paper, that he regarded pivoting as analogous to stopping; the same precautions should therefore be observed in both operations. Several gentlemen had spoken in favour of hickory pivots; he, however, had almost given up the use of them, although a hickory pivot was undoubtedly useful in temporary cases. As to the use of Sullivan's cement, referred to by Mr. Hepburn, he thought it would be serviceable in very hollow roots, and should certainly try it; he might say the same in favour of gutta percha. Mr. Bennett had spoken of the importance of the screw being accurately fitted; undoubtedly it should be so, and fixed as tightly as possible, short of splitting. He had never yet been so unfortunate as to split a root. In conclusion, Mr. Rogers expressed his acknowledgment for the attention that had been paid to his paper.

A vote of thanks having been passed to Mr. Rogers for his interesting paper, the meeting adjourned.

SPECIAL GENERAL MEETING, JANUARY 8, 1858.

A Special Meeting of the Members of the College was held at their apartments, in Cavendish Square, on Friday, January 8th, for the purpose of discussing the propriety of amalgamating with the Odontological Society upon the basis of certain specific propositions agreed upon by delegates from both bodies.

The Chair was taken at eight o'clock by Mr. James Robinson, the President of the College.

The Chairman, in opening the proceedings, said, that he had no doubt they were all perfectly aware that they had been convened in order to consider certain propositions affecting the dental profession throughout these kingdoms. Copies of the propositions had been sent, he believed, to every member of the profession, who was also a member of the College, the object of them being to effect an amalgamation with the Odontological Society upon the conditions therein contained. In discussing these conditions, it should be borne in mind that they must be considered as a whole; that they must not be regarded as admitting of a partial adoption, but that they must be either accepted or rejected in their entirety.

Mr. Hill, one of the Secretaries, then read the proposed terms of amalgamation, as follows:—

Proposed Terms of Amalgamation between the College of Dentists of England and the Odontological Society.

1. That the two Bodies shall be merged into one, and that the name shall be, THE INSTITUTE OF BRITISH DENTISTS, to consist of a President, Vice-Presidents, Council, Officers, Members, and Associates.

2. That in the event of the amalgamation taking place, the United Body pledges itself, that it shall press upon the College of Surgeons the necessity of granting, within a reasonable time, Special Dental Diplomas, on the following terms:

3. That the Court of Examiners at the College of Surgeons of candidates for the dental diploma, shall consist of Surgeons and Dentists in equal numbers.

4. That the dental portion of the Court of Examiners at the College of Surgeons of candidates for the dental diploma shall be chosen by the amalgamated body of Dentists, and that it shall not be essential that the Dentists in such Court shall hold the diploma of the College of Surgeons.

5. That in the event of the College of Surgeons declining to grant the above specified dental diplomas, the Odontological Society and the College of Dentists of England, on thus uniting, pledge themselves that the united dental body shall grant its own diplomas.

6. That the united dental Society shall be the chief educational body, in all subjects connected with dental surgery and mechanics.

7. That the Council shall consist of eighteen members, six only of whom shall be country members; and that the mode of nominating the first Council shall be, that the Council of the Odontological Society shall choose nine members from the present office-bearers of the College of Dentists of England, and that the Council of the College of Dentists of England shall choose nine members from the present office-bearers of the Odontological Society.

8. That the above Council shall nominate a President.

9. That there shall be at least six Vice-Presidents, and that they shall be nominated and chosen in the same manner as specified above for the proposed Council.

10. That there shall be three Honorary Secretaries.

11. That there shall be a Treasurer.

12. That an Assistant Secretary be engaged, who shall also act as Librarian and Curator.

13. The Treasurer and Secretaries shall be nominated by the Provisional Council when formed.

14. The above nominated office-bearers and Council shall be submitted for election at a meeting of members of the united body, to be convened for that purpose. Scrutineers to be appointed at such meeting.

15. One third of the Council shall retire at the end of each year, but such members of Council shall not be eligible for re-election until a year has expired from the time of such retirement, and that no member shall remain on the Council longer than three consecutive years.

16. After discharging the liabilities and obligations of each Society, the funds of each to be merged into one fund.

JAMES ROBINSON,
ARNOLD ROGERS,
JOHN TOMES,
SAMUEL CARTWRIGHT, JUN.,
THOMAS UNDERWOOD,
ROBERT HEPBURN.

The Chairman.—I would suggest that a substantive account should now be given to us of the mode in which the present propositions first came about—I mean, from whom they emanated, who took the initiative in the matter. I do not ask this, mind, in an invidious manner, because I hold, that the man who first extends his hand, is as honourable as he who grasps it. *(Hear, hear).*

Mr. Underwood.—I understand, that the President wishes to know by which of the two bodies in the dental profession the first overtures were made. My answer to that enquiry, is, that they were made simultaneously. A mutual friend of Mr. Tomes and myself, waited upon us at different intervals, and asked if we had any objection to meet as two private individuals, in order to consider the possibility of effecting an amalgamation between the two bodies. Agreeing with the gentleman in question, that, as the two bodies had hitherto been antagonistic there would be no chance of bringing about a union unless some persons connected with each met, we consented to his suggestion, and several interviews thereupon took place. I am not called upon, and I should decline to do it if I were, to give a detailed account of all that passed between Mr. Tomes and myself. The result is before this meeting, and I can honestly say that the first overtures came neither from this College, nor from the Odontological Society. Mr. Tomes and I were brought together as private individuals, and the negotiation was so commenced. *(Hear, hear).*

On the motion of Mr. Rymer, seconded by Mr. Matthews, the report of the delegates was unanimously received.

Mr. Crampten, as a member of both societies, then moved, and Dr. Roberts (of Edinburgh) seconded the adoption of the conditions of amalgamation, as proposed by the delegates of the two bodies.

Mr. Mackenzie.—The first clause of the proposed conditions, in my opinion, contains all that we need discuss upon the matter, and that is with respect to the simple proposition to change the name of our Institution. *(Cheers).* I firmly believe, sir, that to change the name of this Institution would be to annihilate it. *(Hear, hear).* It was only the other evening that we added to our numbers, by election, something like sixty new members, and I am persuaded, that those gentlemen entered our Society because we were a "College of Dentists." Many of our members belong to distant parts of the country, and even of the world, and we cannot call them here to discuss whether we shall henceforth be a "College" or an "Institute." It is very true, that, in the French sense of the term, the words may

be almost synonymous ; but we are not Frenchmen—we are Englishmen. We were originated as a College, and the result is, that we number already something like 300 members : had we been called an Institute, we should not have numbered twenty members ; whilst the Odontological Society, had it been called a College, would have numbered its 500 members in place of the few it now consists of. (*Cheers*). I should heartily welcome all the Members of the Odontological Society, and should hail their presence with the utmost satisfaction, if they would come and be pillars to support our Institution ; but they must not come to obliterate our name and to destroy our *prestige*. (*Cheers*). We have established at great toil, expense and trouble, the " College of Dentists of England," and if those who belong to the Cdontological Society will not join us themselves, their sons will he happy to do so, and will not be able to get on without doing so. (*Applause*).

It may appear to some to be a small matter to make the name of a thing a bone of contention, but we have contended about many more trivial a thing than that, and in the present case I consider that the name is most important. If I thought that the word " Institute" or " Society" carried with it the same weight and significance that the word " College" does, I should most willingly assent to the proposition contained in this clause ; but why should we first allow our name to be destroyed, and then be compelled to wait to see whether the College of Surgeons will be willing to grant that which we are all morally convinced they never will grant ? (*Cheers*). We know perfectly well that the College of Surgeons never will give us a Dental Diploma ; and so to meet that objection a clause is introduced saying that if the College of Surgeons will not grant it, we, the united body will grant it. But by that time, our name has been destroyed ; and would it not be much better for our sons, I ask, that they should be members of the " College of Dentists," than of the " Institute of Dentists" ? (*Cheers*). If you can carry on our Profession successfully, and can teach your pupils, cannot you also examine them ? Why, it is sheer nonsense and nothing else, to say that you can teach and cannot examine ! It was only the other day that a letter appeared in the Medical Times, regarding a certain physiological matter from an M.D. of Edinburgh, which shewed that he knew nothing of what he was writing about ; and why should we go to Doctors of Medicine, or to Surgeons, to be examined upon matters respecting which we know a great deal more than they do ? We don't want

them to come here to be examined by us, and why should we be examined by them? (*hear, hear*). Many of us commenced our professional studies in our boyhood, and I really see no object to be attained in assenting to these proposed conditions. With these few observations, I move the rejection of the proposed conditions (*cheers*).

Mr. Lintott.—I agree in the main with the observations of Mr. Mackenzie, and I see no good that can arise from changing our name. It has served us exceedingly well hitherto. Under it we have selected officers who have conducted our affairs so judiciously that we stand higher in the eyes of the public, than the most sanguine could have anticipated, and I think that we are warranted in expecting great results in the future from the same Institution under the same name (*cheers*); neither do I see, sir, any necessity that there is for an amalgamation. If these gentlemen mean well to us, why do they not join the College in the same way as others do? The mode of election is patent to all, and we should be glad to have them among us. By their educational acquirements and their successful practice, they are admitted to be the leading men of the Profession. As such they ought to have been here long ago. Let them come now and join us, and we shall attain to a position equal to that enjoyed by our brethren on the other side of the Atlantic. I cannot sit down without stating how much we are indebted to the Members of our Council (*cheers*): they have done wonders. I had the honour of being appointed on the Council originally, but I confess that I was afraid of the task before us. I was not well at the time, and as I feared that the work was too great ever to be accomplished, I retired from the Council. All that I can do now is to congratulate the members on the astonishing result of their labours (*cheers*). I repeat, sir, that I do not like the word "amalgamation," and that I should much prefer a practical incorporation of the two bodies by their coming and joining us like other members instead of having an amalgamation (*hear, hear*).

Mr. Turner.—I think that Mr. Mackenzie and Mr. Lintott have done well in confining their objections to the very first proposition with respect to altering the name of the College. Let us look now at the object of this amalgamation. It is to obtain an Examination Board, if possible, upon Dental Surgery from the College of Surgeons —that, the College of Surgeons has been asked, and asked in vain, to do many times already. It has been asked to do it by the Odontological Society, and now that they cannot get what they want by their

own exertions, perhaps they want somebody to help them; but depend upon it, if the College of Surgeons cannot be persuaded by reason it will never be coerced by force, even though the Odontological Society could treble its numbers. It believes in the Divine right of the College of Surgeons, as Charles did in the Divine right of kings, and all the Dentists in the world will never coerce it where reason fails (*cheers*). With this experience before us would it be wise to sacrifice the name and prestige which as a College we possess? If you wish an end put to your Institution, give up your name—it would be policy to do so. We have read in history of one very strong kingdom desiring to roll two kingdoms into one; the bravery of the inhabitants of the smaller kingdom, and its natural defences, prevented that being accomplished by force of arms. Recourse was then had to policy; the king of the smaller country was accepted to reign over the larger, and the result of the policy was that Scotland, so to speak, was marched up to London, and that England has ever since had the best of it (*much laughter*).

I think that a body of men who are able to educate, may find those amongst them who are capable to examine. We have shown our power to educate already, and we have had such lectures delivered here, so well appropriated to the necessities of Dentists, and in every respect so admirable, that it would be impossible to surpass them (*cheers*). The remainder of these propositions do not require to be discussed here. Let us divide upon this simple question—"Are we to change our name as a College, and merge into a mere Institute?" We want a College—we want an educational body such as a College must be, framed and supported by men of ability, men of intelligence, and men of standing. We have that to a great extent already; and if the Odontological Society wish to elevate the profession, they should come and join the Members of the College of Dentists of England. (*Cheers*).

Mr. Lowe.—What are the views of the Council on the subject?

The Chairman.—I cannot give you the views of the Council as a body, because they are divided.

Mr. Underwood.—As a very firm supporter of these propositions, I trust that the meeting will concede to me, and to those who think with me, that we are as much actuated by honest motives, as those who take a different view (*hear, hear*). It has appeared to me from the commencement, that the fundamental object of establishing this College, was to advance the status of the profession throughout

the country. There was a division of opinion amongst the Members of the profession as to the best means of accomplishing that object, and the consequence was, that two Societies were established. It was, I believe, the desire of every well-wisher of the body, that those two Societies should be united, and the only question was, as to the terms on which the union should take place. These propositions have been the result of deliberation. There was a feeling that we could not ask the Odontological Society to give up their own Society and come and join us; but that we must, if we were to form an union which was to have any good effect at all, dissolve both Societies, and establish a new one, composed of the Members of the two. It was unfair to suppose that the Members of that Society, whose names are "household words" throughout Europe, would give up the name of their Society, unless we met them half way, and gave up our name also *(hear, hear)*. I think that the name after all is the shadow, and that the union is the substance. With regard to the question of going to the College of Surgeons for a Special Dental Diploma, it is expressly provided, that half the Examiners shall be Dentists, the elected representatives of the Dentists of Great Britain and Ireland. It is thus provided, that there shall be competent Examiners in that branch of the profession—Dental Surgery—in which Dentists are only competent to examine *(hear, hear)*. I shall be most willing to answer any questions with respect to these propositions which any gentleman may put to me; but I must say, that my own firm conviction is, that if the Dental profession is ever to attain a status as an united body, it can only be by accepting propositions which are fair, honourable, and candid. I hold that these are such propositions, and I say that they have my full, perfect, and hearty sanction and co-operation. I go with them entirely from the beginning to the end, and I believe them to be the best, the most candid, and the most honourable propositions that have yet been offered. *(Cheers)*.

Mr. Matthews.—It is not my intention, sir, to give a silent vote upon this occasion; because, as a Member of the Council, I think it right that those who elected me should know the views that I entertain with regard to these propositions *(hear, hear)*. When you elected me, I entered upon my duties as one of the Council of the College of Dentists of England, and I feel that I am bound, therefore, to support the College, as a College, to the utmost of my power. (After expressing his regret, that he was not able to address

them with so much fluency as he could wish, owing to a severe accident which he had recently sustained, and from the effects of which he was still suffering, Mr. Matthews continued).—But you have not heard the beginning of this case, gentlemen, and I think it only right that you should do so *(hear, hear)*. One of the Members of your Council stated some time ago, at a Council-meeting, that a gentleman had called upon him, and that, from what had occurred, he thought it likely, that an amalgamation between the two Dental Associations might be brought about. That gentleman was deputed by the Council to meet a Member of the Odontological Council, and thence arose the first idea of an amalgamation. I will now tell you what were the first propositions.—The Member of our Council to whom I have referred, stated, after an interview with the Member of the Odontological Council, that he thought an amalgamation might be effected upon these terms, namely—the Odontological Society would unite with the College of Dentists, but we were to retain our name of the College, and were to be the educational body, and they were to retain their name of the Odontological Society, and were to be a conversational body; the two Councils were to merge into one, it being referred to a general meeting to select a certain number from each; we were to remain intact as we were, and they were to join us, and were to discuss subjects of importance with us. When those terms were mentioned, I thought that they were about as fair as could possibly be proposed. *(Cheers)*.

Mr. Underwood.—Remember, it was specially agreed, that this College should go to the College of Surgeons for a specific Dental Diploma.

Mr. Matthews (continued).—Well, I thought that we might, perhaps, give way upon that point. Although I have no particular desire that Dentists should go to the College of Surgeons for a diploma, yet I did not think it derogatory to do so, because it is an honourable diploma, no doubt; but still it only relates to anatomy and surgery, and is not, after all, a Dental Diploma *(hear, hear)*. I voted then in the affirmative upon the general proposition, because I thought an amalgamation on those terms, would be a credit and an honour to ourselves, and to those who would join us: therefore, in order to carry out those propositions, three gentlemen from our Council were appointed to act in co-operation with a like number from the Odontological Society; and after a time, we had a paper presented to us by those gentlemen, which was totally different from

the terms before enumerated. We could not agree to that, and their report was referred back to them for further consideration. You now have the result of that further consideration in the report of the delegates which has been presented to you this evening; and if you ask whether the Council agree to that report, I say, at once, "No" *(cheers)*. I object, like many of my friends around me, to the alteration of our name. We were instituted specifically for the education of the youth, and we are, therefore, an educational body. The other is not so, and does not profess to be so. Its Members meet chiefly for discussion, and for the reading of scientific papers. They are not, then, I repeat, an educational body, and their vocation, therefore, is totally different from ours. Still, I should be very glad if we could amalgamate on honourable terms. I desire it most heartily. No doubt, the Members of the Odontological Society are exceedingly able men, and they occupy such a position in Society, that men look up to them. If, therefore, they will come to us, we will receive them with open arms, but we will not abandon the principle on which we were founded, of being an educational body, and we certainly will adhere to the name of the College of Dentists. *(Loud cheers)*.

Mr. Hill.—Holding the office which I do, of your Corresponding Secretary, I think that I am in a position to state the views of many Members of the College residing away from London; and I say unhesitatingly, speaking from the correspondence which I have received, that the almost unanimous opinion is in favour of the union of the two bodies *(Hear, hear)*. The point which appears to me to be of the greatest importance is this:—We talk a vast deal, and some members have spoken very forcibly, of the fact of our being a College; but if you consider for a moment the circumstance, that the Odontological Society and the College of Dentists together do not number more than 400 out of 1600 practitioners of dentistry, I think you will admit, that we ought, in fairness and justice, to take into consideration the large outstanding mass of the profession. *(Hear, hear.)* I raise my voice for them, and I say, as the result of deliberation and experience, that whether we call ourselves the College of Dentists, or the Institute of Dentists, or any other name, so long as we continue a divided body, so long is there no hope for the dental profession in the aggregate. Units may do a great deal; but they cannot hope to perform so much as atoms in combination. That is an axiom so clear that it requires no knowledge of logic, or metaphysics to make it

palpable. Each man may do a great deal individually; but let him combine with others, and see how much greater and more beneficial will be the result! We have spoken very largely of our numbers; but what are we compared with the outstanding mass? I say "nothing," and that we present to the scientific world the anomalous spectacle of a small body divided against itself. It has been said, that the two Societies are not antagonistic. That is true; but we are not *united*, we are *apart*; and I repeat, therefore, that we present the anomaly of being divided where we ought to be united, and that we are a laughing stock to the scientific circles around us. *(Cheers)*. It is universally admitted, that there are many gentlemen in the other Society who are a glory and an honour to the profession, so I say that we have many likewise in the College of Dentists, of whom we may well be proud; but I earnestly advise you to unite, for "unity is strength." *(Cheers)*. I think, that the propositions considered, either as a whole or in detail, are honourable and fair to both parties. The mode of electing the Council has, in my opinion, been exquisitely balanced, so that there shall be nothing like invidious distinctions made; and it must be remembered, that the propositions only refer to the "nomination" of the Council, the "election" after all resting with you, the Members. The principle of educating our own pupils is not given up, but remains just as it was originally intended. We have the power of educating our pupils, and also of examining them; because, if ever we do go to the College of Surgeons for a diploma (which I have my doubts of), six of the examiners are to be chosen from our own body, who shall examine our pupils on dental surgery, whilst the other Members will examine upon physiological and anatomical subjects connected with our profession. I do not think that we forfeit one whit of our dignity by such a step; but on the contrary that we gain a great accession of strength by being connected with an institution which has a Royal Charter, and is of venerable antiquity. *(Cheers)*.

Mr. W. Perkins.—I object *in toto* to the provisions of the first clause of these conditions; and although I have been patiently waiting to hear some reasons assigned for changing our name, I have heard none yet. Now if there be anything in a name, and I think there is, I believe that our name, in this instance, has done us great good; for I am persuaded, that had we chosen the smaller and more insignificant name of an Institute, we should not have numbered one-half, or even one-tenth of the Members that we now possess. *(Cheers)*. I think,

therefore, until a better name can be found for us, that we must stand by our old one, which in point of fact forms a portion of our *prestige*. I say, therefore, let us retain our name. *(Cheers)*. As to going to the College of Surgeons for a dental diploma, that, in my opinion, brings a great deal of humiliation with it. Is it not something very like proclaiming to the world an admission of our own incompetency? *(Cheers)*. Surely, if we are capable of practising and teaching, we are capable of examining; and why should we ask those who know nothing of our profession to examine in matters of which they are ignorant? What will the world—what will the Americans—our own countrymen in India, in Australia, in the Cape of Good Hope, think of us, when we say, in the year of grace 1858, that we are a dependent body upon the College of Surgeons, after having declared, in the strongest terms in 1857, that we would be an independent body? *(Cheers)*. If we can practice we can both teach and examine, and I am therefore totally opposed to this clause. I say, don't go to the College of Surgeons at all, for I firmly believe, that that body will never give you a diploma. For these reasons, Sir, I disagree *in toto* with the amalgamation on the terms proposed. *(Cheers)*.

Mr. Ghrimes.—I confess that I do not at all like parting with our name; but if that is the only ground on which we differ, I think that we might do even that for the sake of unity. *(Hear, hear)*. I consider, however, that the Odontological Society have yielded to us a great deal. They started by maintaining, that only Surgeons should be Dentists.

Mr. Rymer.—No, I think not. Their own Council were not all Surgeons.

Mr. Keane.—What they proposed was, I think, that all future Dentists should pass the College of Surgeons; but they did not propose to apply the rule retrospectively.

Mr. Crampten.—No, that was not their meaning; and they elected Mr. Cartwright and Mr. Parkinson, neither of whom was a Surgeon, to show that such was not their feeling.

Mr. Ghrimes.—I still think that they are yielding something; and they now propose, in the event of our going to the College of Surgeons for a diploma, that a certain number of Dentists shall sit upon the Board of Examiners. I cannot understand what some gentlemen mean when they say, that it would be humiliating to us to go to the College of Surgeons. Where is there anything humiliating in it? We want to unite ourselves into a recognised body of dentists, and I

think, that the sooner we can do so, and do it upon honourable terms, the better. We have now only 400 Members in both societies, out of 1600 practising dentists in the three kingdoms, and I am persuaded, that if we amalgamated, we should soon acquire a large accession of Members, and much greater strength in consequence. So long as we are separated, there is a want of unity; and there is no disputing the fact, that we are a laughing stock to the world; for, however much they or we may vaunt ourselves, and endeavour to set ourselves up, the public will say—"Here are a small number of men who are engaged in disputing about their own rights, and who are altogether divided amongst themselves." *(Hear, hear).* If we are amalgamated, the position of the whole profession will be improved; we shall then go on as a united society, having one common object in view; and, eventually, I hope we may attain a charter, and may become one of the recognised societies of the kingdom. *(Hear).*

Dr. Roberts (of Edinburgh).—I have come a long way on purpose to be present at this meeting. I have been a dentist for upwards of thirty years, and I have heard the remarks which used to be made about the profession of a dentist long ago. We were not at that time a recognised body, and it has been stated in my own hearing, that whatever business a man failed in, he might always succeed by turning coal merchant or dentist *(a laugh).* I am delighted to think, that that has all passed away—that our profession now numbers in its ranks a large proportion of highly-educated men, and that we have raised ourselves from that pit into which we seemed to have been launched. *(Hear, hear).* As to going to the College of Surgeons for a diploma, there is no doubt that we are all good surgeons as far as dentistry is concerned; but whilst we are surgeons and scientific men, we are at the same time mechanical men. Therefore, though we are perfectly competent to teach and examine our students, in all the practical branches of dentistry, the College of Surgeons is better able to examine in the surgical and anatomical departments. When I received the propositions which are now before us, I spoke to a number of my professional brethren in Edinburgh upon the subject, and I am bound to say, that they met with almost universal approbation. Moreover, many men in Edinburgh declared, that they would join no society so long as we were not united; but that if an amalgamation took place, they would do so. *(Hear, hear).*

Mr. Hepburn.—The question has often been asked, in the course of this discussion, "why should we change our name?" I agree

that it is a pet name, and I will not yield to any one in my respect for it. But the "Odontological Society" is also a pet name with them. *(Hear hear)*. It is dear to the hearts of its founders and originators, and there is no doubt that they are very much in love with it. But there is another reason for changing the name: we are two great bodies, established for one specific object; and when we speak of an amalgamation, we cannot hope to create one great society, rising phœnix like from the ashes of both, unless we sink the names of both. *(Hear, hear)*. This subject cost us many an anxious night's consideration. I assure you, that it was not in a moment that we came to the conclusion to drop the term, "College of Dentists." But our opinions are so well expressed in the Report of the Delegates, that I did not intend to obtrude them upon the meeting this evening; but perhaps I may be allowed to say, that I hail with great pleasure the prospect of such an union as is contemplated, and that my feelings on the point are much strengthened by the opinion of many gentlemen whom I value highly, and who are well qualified to judge what the effect of an amalgamation will be, not upon us only, but upon the entire profession. I believe, if we are to carry forward a liberal-conservative and enlightened scheme of education, suited to the requirements of the rising generation, that there exists at the present moment a strong, I may say an imperative necessity, for that amalgamation, more especially since the views and opinions of both bodies have been so thoroughly discussed, and are now so well understood. *(Hear, hear)*. I know that it has been said on both sides—"Now that we are doing so well, what are we to gain by such an union?" and the answer is—"Nothing." But that is not the question. The question is not what are we to gain, but what is the profession at large to gain?—what will the rising generation gain?—and what will the public gain? *(Cheers)*. The answer to these questions clearly is, that the profession will gain the recognition and identification of its position; the rising generation will gain knowledge in advance of that possessed in our day; the public will gain entire safety, combined with confidence; and we should all gain by the advice and co-operation of men who have been longer in practice than ourselves, and who possess an European reputation. The barrier that exists between our workmen and ourselves, also would be broken down—they would be assistants, and they would be along with us. *(Hear, hear)* We are standing as it were on the threshold of scientific research. If we enter it alone, the result will be comparatively useless; but if we go

together, there is no limit to our sphere of usefulness, and to the position to which we might raise our hitherto isolated, but still noble profession. It behoves us, I think, looking well to the future, to lay aside every personal consideration, and to consult the interests of the whole of the profession. If we do that in good faith and honesty, we shall not regret it; but if we do not, I confess I tremble for the issue. *(Cheers).*

Mr. Kempton.—I am of opinion that we should not change our name, and that we should not, upon slight grounds, abandon that which has served us well, and which was not adopted without much consideration and anxiety. The name is, in my opinion, a very euphonious one, and I believe that the public would more willingly recognise a College than an Institute.

Mr. Purland.—No one can feel more strongly than myself the advantages which would arise from an amalgamation with the Odontological Society; but I could never consent to it at the expense of our name and our independence, coupled with the probability moreover of having one's subscription, on the twenty-first of this month, doubled, or perhaps trebled. *(Hear, hear).* We are not losing ground—we are not losing caste; witness the last election. The circumstance is unprecedented in our history, that upwards of sixty new Members should be balloted for and elected in a single night. I feel, like others, that to join the Odontological Society, would be a very great thing for the College. I don't shirk that question in the least. I look upon those men with the greatest reverence; they are men of high position and undoubted ability. I am perhaps one of the oldest practitioners in this room, for I began at the mature age of eleven. *(A laugh).* I am now fifty-three, and I am the son, and the grandson of a dentist. As for going to the College of Surgeons for a diploma, I look upon it as a mere chimera, for those gentlemen admit, that they are not capable of asking us a single question. I believe that some of them could not even tell you the periods of dentition; and surely that is not a College to go to for a diploma. If you had such a document, you would only place yourselves in a false light before the public, for you would have the diplomas of surgeons, whilst you called yourselves dentists. A diploma from your own body would be valuable; but I really almost think, that we might as well go to the Barbers' Company, or to the Fishmongers, for a diploma, as to the College of Surgeons. *(A laugh).* I shall vote against the proposition.

Mr. Underwood.—With respect to the notion of being called upon for increased subscriptions on the twenty-first of this month, I beg to state, that it is distinctly understood, that the subscription shall be two guineas a-year. Every gentleman who now belongs, either to this College or to the Odontological Society, will, by virtue of his membership, become a Member of the Amalgamated Society, and there is no intention whatever either of increasing the annual subscriptions, or changing the entrance fee to those who are Members of this body. As for the value of the diploma of the College of Surgeons—it will be signed, if granted, by those gentlemen who are dentists on the Board of Examiners.

Mr. Tibbs (of Cheltenham).—I have been a dentist for about thirty years, and I have had some experience in the world; and I have always found, that if you want to effect a union between two bodies, you must take care that the parts to be compounded are in the proper proportions. You must not ask more than you are willing to grant. *(Hear, hear).* Now, upon this occasion, I must say, that I think that the Odontological gentlemen have met us half-way, and if I did not think so, I should not support this proposition. They started, as we know, as a very exclusive body indeed; for if they did not state that every one should be a Member of the College of Surgeons, they at all events stated that they would not recognise any one as an Associate. By this means they effectually closed the doors against our assistants, keeping them in the position of workmen, and shutting them out from any chance of participating in the privileges which they themselves enjoyed. They have now altered that, and consent to the admission of Associates. That, therefore, is one concession. *(Hear, hear).* Another concession is the giving up of their own name; and having themselves proposed to do so, I think that we cannot do less than follow so gracious an example, and give up our name also. I agree with you, that a College is a better name for an educational body than any other name that can be devised; but I do not think that it is absolutely essential, supposing the Amalgamation were to take place, that the united society should be called "The Institute of British Dentists." I don't think that the name need be any obstacle, after the two bodies were fairly united, and I have no doubt that you might agree upon something approximating to the designation of a College after all. It has been stated, that under the proposed terms we shall not be Examiners. I say that we shall. The examination for the diploma will not be taken out of our hands,

and we shall examine as dentists the candidates for the specific dental diploma. According to these terms, as I read and understand them, we may grant diplomas to qualified candidates in dentistry, and we shall not only teach, but we shall examine our own dentists. *(Hear, hear).* I think that every gentleman who has spoken admits that an amalgamation would be most desirable, and I think that you must all agree, that unless it takes place now, it will never take place—at least I will not say "never," but certainly not in my time. *(Hear, hear).* We have had difficulties to encounter in passing through the first year of our existence; but you will find it more difficult to increase your strength in the second year, unless you infuse fresh blood; and the blood which you have now the opportunity of infusing is good blood—there is no doubt of that. *(Hear).* We have, moreover, as one gentleman has very properly remarked, a duty to perform to the public. We are not merely to work for ourselves. What opportunity, I ask, has any one now of knowing who is a properly qualified dentist? None whatever; but once secure a chartered dental College, and you will afford a sufficient guarantee to the public, that the men who are connected with it, are competent to practise. You have referred with natural pride and congratulation to the fact, that you had an accession of sixty-two new Members at your last meeting; but is it not very probable, that those sixty-two Members, coming in at the end of the year, have joined you in the expectation of an union with the Odontological Society? *(Cries of "No, no").* I can only say, that in my neighbourhood I found that there was a very general desire to join the College of Dentists at this time, because they would by that means have the opportunity of gaining an admission, without examination, to a body which has been hitherto so exclusive. That, I think, is one reason why you had such an accession of Members at the end of the year. It appears to me, that you entertain some indefinite sort of fear, that you will be swamped if you join the Odontological Society. What is the reason of that fear? If your votes are four to one, it will be for you to accept, or to reject, at your pleasure, the laws which may be proposed by the United Council. Therefore, why you should fear being outvoted, after the amalgamation, I cannot possibly imagine. *(Hear, hear).*

Mr. Snape (of Chester).—If I had known, when I joined the College of Dentists, that there was a rival body in existence, I tell you plainly, that I would not have joined either one or the other; and I know scores of dentists who say, that we must be united, or

both must fall to the ground, and who decline therefore to have anything to do with either, until they are united. I find, that in Liverpool there are not more than one or two who are Members of either society; and in Manchester, and other large towns of the kingdom, the same feeling prevails. I am anxious, then, for an Amalgamation —not for myself, because I am pretty independent; but I have two boys, whom I intend to bring up to the dental profession, and I look to their interests after I am dead and gone. (*Hear, hear*).

Mr. D. Hepburn.—After all the discussion which has taken place, I am of the same opinion that I was before I came here to-night. We must look at the question in a comprehensive view, and not in a personal light, and, so regarding it, I think all must agree, that unity would give us the strength which we require. (*Hear, hear*). Although the College has undoubtedly accomplished a great deal, I fear that, unless carried on in conjunction with the Odontological Society, it must in the end fail in carrying out the great objects which it has in view. The great difficulty which appears to have been raised in the way of the union, is with respect to the name of the College. The term Institute has been ridiculed by a gentleman near me (Mr. Turner), as applying to a thing which any half-dozen tradesmen in a country town might initiate in half-an-hour. But I ask, might they not just as easily make themselves into a College in half-an-hour? (*Hear, hear*). I am surprised that there should exist two opinions with respect to the value of diplomas from the College of Surgeons; for I think that the *prestige* and position of the College of Surgeons would give us a character and *status*, which, as a distinct body, we never should be able to obtain. With respect to the capability of this College to carry on and to educate its pupils in the future, this point must be borne in mind:—We have gone on well hitherto, and have had some excellent lectures—admirable in every way, and thoroughly practical—delivered here; but the most of them have been gratuitous. When we have to secure the services of hired lecturers, however, it is evident that we shall require great means to enable us to continue the necessary instruction. (*Hear, hear*).

Mr. Rymer (Secretary to the Council).—I don't wish to talk so much about a name as about a principle (*hear, hear*). I feel that I can scarcely give a silent vote upon this occasion, after the part which I have taken in this great reformatory movement. I don't want to push forward the College of Dentists, but what I wish to do is to promote Dental reform. I believe that the best means of elevating the

status of the Profession, is to provide that the pupils shall be educated and examined by Dentists, and that they shall receive their diplomas from Dentists; because, I believe that Dentists are much more competent to grant certificates of proficiency than either board of Surgeons, or a mixed board of Dentists and Surgeons (*cheers*). There is one point involving the question of consistency, with respect to which I wish to set myself right with the Members of the College. Some few years ago, I published a letter in which I expressed my opinion, that it would be desirable if the College of Surgeons would grant a dental diploma. Under these circumstances, it may seem inconsistent for me now to say that I think a dental diploma should be granted by Dentists. I wish to explain therefore, the reasons for my change of view. When I published that letter, I don't think that I knew more than two or three Dentists in England, and I was anxious that I should not belong to a body which had no recognition at all. I published that letter when the Profession was wholly disorganized, and when I thought that it would be utterly impossible ever to organize it. Some time afterwards, when a Journal was started devoted to Dental Surgery, I therein suggested that possibly the Dental Profession might be organized into one body. In consequence of that public suggestion, I received many letters on the subject, expressing a general concurrence in the idea. The result was, that I felt so sanguine of success that I determined on my own responsibility to call a public meeting of the Profession. That meeting was not called with the object of forming a Society there and then, but merely with the view of eliciting the opinion of Dentists. It was largely attended, and it was eminently successful. Dentists came to it from all parts of the kingdom, and when we separated at the close of the proceedings, I believe we were all persuaded that a brighter state of things was looming in the future. (*Cheers*). A committee was appointed, and another meeting was called. That was a great meeting, and it was then determined to establish the College of Dentists. In the interval I had an opportunity of ascertaining the views of others of greater experience than myself, and they and I had arrived at the conclusion, that the Dental Profession should be an independent body. (*Hear, hear*). From that time I have never altered my opinion, and all experience since has only tended to confirm it. That also, was the opinion of the committee, and they framed laws accordingly for the acceptance of the Members of the College. Those laws were framed with the greatest care, and after the most anxious attention; and their funda-

mental principle is to unite the Members of the dental profession into a recognised and independent body. That was the principle; and you elected me your Secretary, on the understanding, that I would do my best to carry out the fundamental laws and principles of the body. (*Cheers*). The Council issued their circular. It states that "the object for which the College of Dentists of England is established, is to unite the Members of the dental profession into a recognised and independent body." That circular was sent to all the Members of the profession, and soon afterwards we had a large accession of Members to our body. I almost wish, Sir, that I could alter my views again upon this subject, so anxious am I for an Amalgamation with the Odontological Society; but I cannot do so with any regard to principle and honour. (*Hear, hear*). I dislike the alteration of our name; but I object altogether to going to the College of Surgeons for a diploma, because I hold such a step to be entirely incompatible with independence. In fact, I think that it is un-English. (*Cheers*). The College of Dentists is known and recognised all over the world; and if gentlemen think that it has no *status*, I can only say, that I never heard that allegation urged against it. The whole principles of the College are well stated, in a very few words, in the "Lancet" of last Friday (January 1st), in which the writer says—"The College of Dentists depended upon themselves, on the great interests which were at stake, and on the justice of their cause." (*Cheers*). We did do that, gentlemen. Let us do it still. We have never yet met with an obstacle which we did not overcome, and we will persevere to the end with the same independent and unflinching energy. As to the *status* of your Members, I have the highest respect and esteem for the Odontological Society, and I believe that it would be an immense benefit to the profession at large, if we could amalgamate on honourable terms; but I object to raising one body over another. (*Hear, hear*). The dental profession ought to be a republic, and I do not think it right, in these discussions, to assume that one body is superior to another. No one can be a Member of the College of Dentists unless he practises in a legitimate manner; and as a body of 300 men, so practising, I say, that you occupy a very high position in the scientific world. (*Cheers*). You may say, that our numbers are very few; but I think it wonderful, that in one short year one-fourth of the whole body of dentists who are eligible should have joined the two societies, without possessing a charter of incorporation. I believe that such a circumstance is unprecedented in the

history of similar institutions. (*Cheers*). In Mr. Hill, although we are ranged on different sides on the present occasion, I have always found a kind friend and coadjutor; but I must remind him, that whilst we are a public body, established for educational purposes, the Odontological Society occupies the position of a respectable private club. With respect to the College of Surgeons, I do not see any benefit that we can gain from associating ourselves with a body which Mr. Hill himself characterized as "antiquated." We had much better go on as we have begun, pursuing our own straightforward course, without the fear of any one; and so shall we win the esteem of all honest men, and the approbation of our own consciences. (*Applause*).

Mr. Hill.—After reciprocating the kind expressions which Mr. Rymer had used with regard to him, stated that he had not used the word "antiquated" as applied to the College of Surgeons, or at least if he had, he had used it in the sense of implying that that body was respectable from its antiquity.

No other speakers rising to address the meeting, and the calls for a division becoming general—

The Chairman said—It is now for you, gentlemen, to come to a conclusion, and either to accept, or reject these propositions. You have heard them discussed, *pro* and *con*, in a kindly and gentlemanly spirit, by all parties, and I hope you will arrive at a just conclusion.

A show of hands was then taken, when there appeared—

For Amalgamation upon the terms proposed ..	27
Against	34
Majority against	7

A Vote of Thanks to the Chairman terminated the proceedings.

FIRST ANNUAL GENERAL MEETING.

The First Annual General Meeting of the Members of this Society was held on the 21st of January, at their rooms, in Cavendish Square, under the presidency of Mr. P. Matthews, the Treasurer.

Mr. Matthews, on taking the chair, said—Gentlemen, in the absence of our President, who, as you no doubt are aware, has re-

signed his position, I have been requested by the Council, as your Treasurer, to take the chair this evening (*hear, hear*); and I trust, that in this new post, you will give me your able support. I believe that you have all received your balloting papers, but in case any gentleman should be unprovided, he can obtain one presently. We have met here this evening agreeably to the 12th law, which is to the following effect:—"An Annual General Meeting shall be held in January (at such time and place as the Council appoint), to receive the Report of the Council, to elect officers for the ensuing year, and to transact the general business of the College." I shall now call upon our Secretary, to read you the Report of the Council.

Mr. Rymer read the following Report:—

FIRST ANNUAL REPORT.

The period having arrived, when it becomes the duty of your Council to report the result of the working of the College of Dentists of England, during the first year of its existence, the following brief record of the progress made since their election on the 16th December, 1856, will, it is hoped, supply the Members and Associates with sufficient evidence to prove, that they have endeavoured to fulfil the duties of their office with a full sense of responsibility.

It will be remembered, it was at the Public Meeting of the Profession, at which your Council were elected (as above referred to), that the College was established; and that all present on that occasion, who considered themselves eligible, were entitled to hand in their names for membership, without the formality afterwards required by the laws. A large number of gentlemen availed themselves of this privilege; and upon the first assembling of your Council, it was judged prudent to appoint a Committee of Enquiry, to ascertain whether the names thus received were eligible to remain on the list of Members and Associates. The object of this proceeding needs little comment. The scattered and varied elements of which the profession was composed previously to the formation of the College, were such as to render it possible, that disreputable practice might find itself strengthened by one of the very means employed to repress it. The Committee of Enquiry pursued the delicate duties of their office for a period extending over some months, during which the utmost care was taken, that the Council should be made acquainted with the eligibility of those who had sent in their adhesion; and it

is with much satisfaction that your Council can report, that of the large number of names received, few were returned as ineligible.

The first year of the existence of an Institution, having such important objects in view as the College of Dentists of England, necessarily imposes upon those to whom the conduct of affairs is entrusted, the arrangement of many preliminary matters, involving the employment of much time, which would otherwise become available for deliberation upon questions of apparently greater moment. Your Council have had a full share of such preliminary business to dispose of: for instance—the engagement of suitable apartments for holding the meetings of the College, and for the transaction of general business. In this particular, your Council were fortunate in securing accommodation in Cavendish Square, upon favourable terms.

But although the preliminary arrangements have occupied much time, they have not prevented your Council from taking into anxious consideration, the early development of the educational objects for which the College was established. In the course of the first Session, they secured the services of Dr. Steggall, and other gentlemen of well-known talent, to deliver lectures to the Members and Pupils, with especial reference to the latter class. These lectures were delivered in the following order :—

On February 19th—JOHN STEGGALL, M.D., &c.

Subject :—Descriptive Anatomy of Bones, Muscles, Vessels, and Nerves of the Head and Face, embracing Physiology and Therapeutics.

On February 26th—JOHN STEGGALL, M.D., &c.

Subject :—Descriptive Anatomy, &c. (Continued).

On March 5th—JOHN STEGGALL, M.D., &c.

Subject :—Descriptive Anatomy, &c. (Concluded).

On March 19th—JABEZ HOGG, M.R.C.S., &c.

Subject :—Histological Anatomy—its value to the Student. The Microscope—Historical Introduction — Optical Arrangements—Appliances—and Preparation of Objects.

On March 26th—G. SIMPSON, F.R.C.S., &c.

Subject :—General Anatomy.

On April 2nd—JABEZ HOGG, M.R.C.S., &c.

Subject :—Histology of Cell Development—General Characters and Development of Tissues, Hard Structure, and Tooth Structure in particular.

On April 9th—G. SIMPSON, F.R.C.S., &c.

Subject :—Special Anatomy.

On April 16th—Dr. GLADSTONE, F.R.S.

Subject :—Bone Enamel, and the Metals, &c., used in Dentistry.

On April 23rd—JABEZ HOGG, M.R.C.S., &c.

Subject:—Histological and Comparative Anatomy of Teeth—Diseases of the Dental Tissues, Dental Caries, &c,

On April 30th—Dr. GLADSTONE, F.R.S.

Subject:—Bone, Enamel, &c. and the Metals used in Dentistry. (Concluded).

On May 7th—ALFRED CARPENTER, M.B., &c.

Subject:—Principles of General Surgery.

On May 14th—ALFRED CARPENTER, M.B. &c.

Subject:—Principles of General Surgery. (Concluded).

To the gentlemen who thus kindly and liberally came forward to give their aid when the College was in its infancy, the Members and Associates must ever feel deeply indebted.

The Monthly Meetings of Members of the College have proved eminently successful—not only on account of the kindly professional feeling arising amongst the Members and Associates from meeting periodically upon neutral ground, but also for the information imparted by the valuable papers read from time to time, and the instructive discussions which have followed them. It is a source of gratification to your Council, that a permanent record of these papers and discussions is provided in the "Transactions of the College for the Year 1857"—the immediate publication of which will render it unnecessary that this Report should be greatly prolonged.

In addition to providing the Lectures, and regulating the Ordinary Meetings, your Council have, after much consideration, adopted the By-Laws, which have been placed in the hands of every Member and Associate. Your Council are aware that some of these By-Laws will require the sanction of a Special Meeting of Members of the College before they can become binding; and they would here recommend, that a general revision of the Laws and Constitution should be made at an early period; when, if thought desirable, the By-Laws alluded to, could be incorporated with the Fundamental Laws.

A reference to the "Transactions" will shew, that your Council have not been neglectful of the interests of the Profession at large. Immediately that its position appeared endangered by the Medical Bills before the late Session of Parliament, prompt measures were taken to neutralize the injurious effects of the proposed measures, so far as the Dental Profession was concerned.

In conclusion—your Council would advert to the unfortunate want of unanimity in the Profession upon the Educational Question,

as having, no doubt, prevented many Practitioners from assisting in the cause of Dental Reform: at the same time, it should not be forgotten, that a far larger number of Dentists have become Members of the College, than have ever before been associated together in Great Britain. It has been the endeavour of your Council to conciliate dissentients, and, with this view, three of their Body (the President, Mr. Underwood, and Mr. Hepburn) were appointed delegates to confer with three representatives of the Council of the Odontological Society, upon terms for amalgamating the College with that Society. The Delegates' Report, containing the terms of amalgamation agreed upon by them, was submitted to the Members at a Special Meeting on the 8th instant, and negatived. Your Council deeply regret, that the result of the division at this meeting has been the cause of the resignation from the Council of the Delegates on the part of the College—the President, Mr. Underwood, and Mr. Hepburn, having looked upon the votes of the majority of the meeting, as signifying a want of confidence in them. Mr. Hill, Mr. Rogers, Mr. Ghrimes, and Mr. Fox, who supported the views of the delegates, have also regarded the decision in the same light; and the valuable services of these gentlemen are lost to the Council. It is needless to refer to the indefatigable exertions of Mr. Robinson, in his position as President; nor to those of Mr. Hill, as Corresponding Secretary. Your Council feel assured, that every Member and Associate will share with them in deeply regretting the conclusion they have thought it right to adopt. Although the efforts made to promote harmony in the Profession have as yet proved unsuccessful, the strong desire expressed in all quarters for unity of action, leads your Council to hope and believe, that the Members will support them in the endeavours they are determined to use, in bringing about an amalgamation upon terms honourable to all parties.

Signed by order of the Council

PETER MATTHEWS, *Chairman.*

SAMUEL LEE RYMER, *Hon. Secretary.*

The Chairman.—You have now heard the report of the Council, and I think I may say, that it is elaborate and complete in its record of the proceedings of that body during the past year. It is not my province, as your Chairman, or as holding an office in the Council, to speak of our labours during the year, but I must take the opportu-

nity of calling your attention to some of the more salient features of the report. (*Hear, hear*). The precautions which were taken by the Council, not to allow any irregular practitioners to become Members of the College, devolved upon us duties of a very arduous nature. A Committee was formed for the purpose, who went through every name *seriatim*; and the result, I believe was, that every irregular practitioner was weeded out, and was not allowed to become a Member of the College. (*Hear, hear*). The first year of our existence naturally involved many preliminary arrangements. Amongst them was that of obtaining suitable apartments, where we could meet. That has been done by the selection of the rooms where we are now assembled. They have been found convenient, I believe, and especially fitted to the purposes for which we meet. The time of the Council, however, has not been occupied solely with preliminary matters. Highly interesting lectures have been given, which have afforded, I think I may say, universal satisfaction; monthly meetings have been held, at which the opinions of Members have been advocated and expressed with great ability and good humour; and I am sure that we have had many very agreeable meetings. (*Cheers*). I now come to the by-laws; and the Council feel that those laws require your sanction in many particulars; but the time of the meeting will probably be so fully occupied this evening, that it will be necessary to summon another meeting specially for their consideration, when I hope we shall be able to introduce an important law, with respect to the mode of collecting the votes of Members. I am of opinion, and the whole of the Council agree with me, that the time has come when we should give to every country Member the opportunity of recording his vote. We think, therefore, that Members who are not resident in town should be entitled to vote by proxy. (*Cheers*). And now, in reference to the latter part of the report, no one, I am sure, more sincerely regrets the termination of our proceedings than I do. I assure you, as one of the Council—and I know you will give me credit for what I say—that whatever my opinion on certain measures may be, I have always been anxious to promote union and harmony among them. The time has come at length, when the question of amalgamation with the Odontological Society can no longer be set aside. It is of the utmost importance to the profession at large, that the amalgamation of the two Societies should take place, and that it should do so upon terms that will be honourable to both parties, I most sincerely trust. (*Cheers*). I think that the main

question of difference has been as to the title of the united body ; but, I really think, if we once had an amalgamation, that the title of the institution might be safely left to a general meeting to determine. (*Hear, hear*). Let it not be a question of party ; but if we unite, let the opinions of all be consulted, and let the matter be arranged in a sensible and amicable spirit. We have to regret exceedingly the loss of our President, and of many Members of the Council. We have been left at the last hour in exceeding difficulties ; but I hope that the measures which we have adopted since the retirement of those gentlemen, may meet with your approval. We have done our best to supply their places, but I, for my part, would gladly have left the vacancies open, so that every Member who has retired from the Council might be unanimously elected by you again. Indeed, the Council felt, with regard to the office of President, that it would be an insult to that worthy Member, who has resigned his post, to appoint another in his stead. Such was the feeling, I assure you. So invaluable have been his services, that to appoint a competent successor was really beyond our power. (*Cheers*). Then we have to regret the loss of another most valuable officer, Mr. Hill, our Corresponding Secretary. (*Cheers*). I am not here to eulogize individuals in their presence ; but if you have any idea of what the duties of a Corresponding Secretary must be, you may form some notion of the valuable services of Mr. Hill. He is a gentleman in the profession, like yourselves. You know that he has had arduous duties to perform in that position ; but his midnight oil I believe has been burnt to satisfy the wants of this College. I am most sincerely grieved that we have lost him, but I trust that his absence will be but temporary. (*Cheers*). We have not filled his place up, because we find it impossible to fill it. We regret his loss, and I hope that you will, by your voices this evening, endeavour to persuade that gentleman to resume his position amongst you. We have had another very serious loss in our Members—more particularly I allude to one who, though we have often differed in opinions, is yet so worthy a coadjutor, and so amiable and gentlemanly in all matters, that we always separate with that cordiality of friendship which is so desirable amongst the Members of the same Council—I mean Mr. Underwood. (*Cheers*). He has been pre-eminently the man who has been anxious to allay all differences and hostilities, and he has been one of the most indefatigable Members of the Council. When those gentlemen tendered their resignation, I assure you that I was taken very much aback. It

is only a few days ago that it occurred; and I endeavoured to persuade our worthy President, considering that we were but in our infancy, not to neglect the child of his own heart, on which he had lavished so much of his fostering care; for I thought it a pity that he should desert it after having tended it so carefully. (*Applause*). I appealed also to the other Members. We had antagonists, and you know that antagonists, though gentlemen, will always take advantage of any little indecision or difficulty into which their opponents may be thrown. You know what the world is. If a house be divided against itself, it cannot stand; and if a Council be divided, it is impossible to carry out to a successful issue so great a work as we have begun. (*Cheers*). Having stated thus much, in reference to the report, and to the position in which we are placed, I hope that measures may be propounded this evening, which may induce those gentlemen to resume their position in the Council. If that be done, I have no doubt that what they desire (though not more strenuously than I and other Members of the Council), an amalgamation, will certainly take place. (*Cheers*). I know that such is the feeling of the great majority of the Members, that had the Delegates come down and asked, first—"Shall an amalgamation take place?" the answer would have been an unanimous affirmative. Then, had each proposition been considered *seriatim*, I have no doubt that every one of them, with a very slight modification, might have been carried; but you were told by the President—"There is the bill before you; you must take it as a whole, or not at all, and there must be no modification whatever." It was owing to that, I fear, that that which he and I, and many others, so much desired, was not carried to a satisfactory conclusion. However, that is past and gone. The thing has been settled so far, and I hope that we shall begin again on a new foundation, which will recommend itself to all parties. (*Cheers*). Now, is it your pleasure, gentlemen, to receive the report of the Council?—if so, signify the same in the usual way.

It was then unanimously resolved to receive and adopt the report.

The Chairman then read the following report from himself, as Treasurer, interspersing the statement with explanations of the various items as he proceeded, and adding, that his books were open for the inspection of any one who wished to see them:—

The Treasurer in Account with the College of Dentists of England.

1857. DR.—Cash.

		£.	s.	d.	£.	s.	d.
2	Life Subscribers				42	0	0
154	Members at £2 2s.	323	8	0			
95	Ditto at £3 3s.	299	5	0			
251		622	13	0			
5	Less whose Subscriptions have been returned.	11	11	0			
246					611	2	0
35	Associates at £1 1s.	36	15	0			
22	Ditto at £1 11s. 6d.	34	13	0			
303					71	8	0
	2 Associates who have become Members				2	2	0
	Donations				18	7	6
					£744	19	6

PETER MATTHEWS, *Treasurer.*

1857. Contra.—CR.

	£.	s.	d.
Balance of Preliminary Expenses of the Provisional Committee	8	1	9
Printing	121	4	8
Stationery	18	2	2
Postage and Envelopes	57	3	1
Rent of Premises, and including Meetings at the Freemasons' Tavern, and Hanover Square Rooms	53	19	0
Diagrams	7	4	4
Refreshments at the Inaugural Meeting, Annual ditto, and for Lecturers	16	13	2
Advertisements	30	5	6
Newspapers	20	4	6
Clerks	15	19	0
Reporters	5	19	6
Cabinet Maker	8	18	3
Porter's Wages, and Porter's Attendance	16	10	0
Sundries, including Cab-hire on emergency	11	4	1
	391	9	0
Balance at Bankers	353	10	6
	£744	19	6

We, the Auditors appointed at the Ordinary Meeting of the College, January 5th, 1858, have diligently examined the Treasurer's Accounts, and certify to their correctness in every particular.

THEODOSIUS PURLAND,
HARRY L. SPENCER.

The report was unanimously received and adopted.

Mr. Rymer read the report of Mr. Fox, the Librarian, which was also unanimously adopted. (The report contained a list of articles and books given to the College, notice of which has already been published in this Journal.)

The Chairman stated that their next business was to proceed to the election of officers; but previously to doing so, he called upon the Secretary to read the correspondence which had taken place relative thereto.

Mr. Mackenzie here raised a formal objection, which he feared would be fatal to proceeding with the election at that time. It was based upon law, No. 4, which provided, that the poll, upon such occasions, should remain open from seven o'clock until nine. It was at that moment nearly nine o'clock—the meeting not having commenced until eight, and it was impossible, therefore, to comply with that law, which was positive, and could not be set aside.

A long and somewhat desultory discussion ensued, which was shared in by the Chairman, Messrs. Tibbs, Lambert, Underwood, Fox, Spencer, Rymer, Ghrimes, Turner, Hill, Mackenzie, Perkins, Purland, and others.

Ultimately, it was unanimously resolved, upon the motion of Mr. Underwood, seconded by Mr. Hepburn, to proceed with the general business of the meeting, with the exception of the election of office-bearers, which was adjourned for a month.

The Chairman then announced, that he was open to any observations that were regular, that any gentleman might have to make, the ordinary business of the meeting being, now that the election of officers was postponed, actually concluded.

Mr. Mackenzie asked if any evening had been appointed for the revision of the laws of the College?

The Chairman.—Not yet. The Council will call a special meeting for the purpose, and will give due notice of it.

Dr. Reed, of Edinburgh.—Perhaps there will not be a better opportunity for making a few observations upon this important subject than the present. It would be a pity if this meeting separated without something like an expression of feeling going forth upon the question of vote by proxy. (*Hear, hear*). I appear here only as an individual; but I think that I but give voice to the general feeling on the subject, when I say, that I do not believe there is a man in the country who does not think that he should be represented here by proxy. (*Hear, hear*). We are a body, not confined to London. Our Members

are spread over the whole of this country, and over foreign countries, and yet, in the formation of our laws, strange to say, we have made no provision for voting by proxy. I do not think that our body can be said to be efficiently constituted, until our rules are so amended, as to embrace a clause, containing a provision on that, to us, most important subject. (*Cheers*).

The Chairman.—The sooner that question is taken into consideration the better; and I think that the next meeting for the election of the Council should also be made special, for the consideration of the by-laws. The question would then, no doubt, come under review on that evening. (*Cheers*).

Mr. Finzi next rose, and proposed a vote of thanks to the President and Council, for their zealous and indefatigable exertions in behalf of the Institution during the past year.

The vote was seconded by Mr. Mackenzie, and was carried with acclamation.

Mr. Robinson.—On my own part, gentlemen, and on that of the delegates, and those who have been connected with me in carrying out the objects of this Institution, I beg to thank you most sincerely for the honour you have done us, and at the same time to express my great gratification at the unanimity which, up to the present time, has existed amongst the Council. (*Hear, hear*). With reference to the exertions of the delegates, I assure you, that duties devolved upon them, which required them to exercise an immense amount of *finesse:* and there was one point with regard to the name, which I don't hesitate to tell you your delegates fought for most strenuously. (*Cheers*). They thought that if they could retain the name of the "College," it would be every thing; but the gentlemen on the other side said —"We give up our name: we concede to you all you ask in reference to the associates (which I stipulated for when I first joined the College)—we will go to the College of Surgeons, on the understanding that there shall be a certain number of Dentists on the examining board, and if the College of Surgeons will not then grant a dental diploma, the joint body shall grant it themselves." (*Hear, hear*). It appeared to me, I confess, that these were very great and important concessions; because the fact of our having dentists on the examining board, removed many of the objections to going to the College of Surgeons, and there was the further valuable stipulation, that if that College did not then grant degrees, we should come back to our own institution, and apply to Parliament for a Charter for educating, exa-

mining, and granting dental diplomas, specially emanating from our own body. (*Hear, hear*). These were the propositions to which the delegates on both sides assented. But as these propositions were refused, by a general meeting of the Members of this society, we felt that we could not hold office in opposition to the views of the majority, and we therefore resigned our position as active members of your Institution. At the same time, be it perfectly understood, that not one of those who resigned, will join the Odontological Society, so long as it is the Odontological Society. (*Loud cheers*). But let me guard you upon one very important point in relation to the amalgamation question. It is not settled —it is any thing but settled. That amalgamation will be carried; and I have good data to go upon, when I say, that I believe it will be carried by an enormous majority, when we have the votes of the country members properly taken with respect to it. One of our Vice-Presidents, Dr. Reed, has come up from Edinburgh, specially to record his vote to-night. Mr. Tibbs, another Vice-President, has come up from Cheltenham for the same purpose, but unfortunately they have come on bootless errands; for I knew the position that you would be placed in by that fourth law, and I knew that our friend Mackenzie would take advantage of it. (*Hear, and a laugh*). Mr. Tibbs remains with you as a Vice-President, but it is upon this condition— that if the amalgamation be not carried, he can resign at any moment. That is his stipulation, and many others remain with you on the same terms. It is for you to adopt or to reject the propositions which the delegates were enabled to lay before you. Do with them as you please; but I believe them to be the best for the interest of the profession that could be obtained. Your delegates fought hard for many of the principles which are now conceded for the first time, and I add, that in my opinion, they obtained terms, which twelve months ago, you never could have gained. (*Applause*). I beg again to thank you for the honour which you have now done me, and for the assistance which you have invariably afforded me in discharging the duties of your President. Discussions have often occurred, both at the Council and at the public meetings, which have savoured of a little warmth, but I acquit every one, and I trust every one will acquit me of being actuated by personal motives in any thing that we have said or done upon these occasions. We all feel, I am sure, a sincere desire for the advancement of our profession, and I hope that hereafter, as hitherto, it will always appear, that we became united, not for the personal gratification of any one, but for the common benefit of us all. (*Cheers*).

Allow me to say a few words more before I sit down. We have received the report of the Treasurer this evening, and I am sure that the Members present must feel grateful, and much indebted to our worthy Treasurer, for that clear and lucid statement of accounts with which he has favoured us. (*Cheers*). I assure you, gentlemen, that I am not speaking mere empty words. It is not in that way that I am in the habit of addressing you, but I speak to you as a Member of the College of Dentists, and as one who knows well the valuable and indefatigable exertions of our able and worthy Treasurer. His accounts have been audited at every Council meeting, and his balance has been regularly carried on. We are much indebted to Mr. Matthews, for the clear and satisfactory manner in which he has kept the accounts, and I therefore wish to propose, that you should give an unanimous vote of thanks to our worthy and excellent Treasurer, Mr. Peter Matthews. (*Cheers*).

Dr. Purland, as one of the Auditors, had great pleasure in seconding the motion. He could bear testimony to the perfect clearness with which every account was kept. Every voucher was in its place, and every item, down to the smallest particular, was so clear and so correct, that the office of the Auditors, if not a work of supererogation, was at all events almost a sinecure.

After a few words from Mr. Lambert, also in support of the motion, it was carried with hearty acclamation.

Mr. Hepburn.—Following in the wake of the gentlemen who have preceded me, I should like to propose a vote of thanks to a devoted and tried servant of the College since its formation. If time permitted, I could enter very fully, because I could do it with perfect sincerity, into all the labours which have been performed by our Corresponding Secretary, Mr. Hill. (*Loud cheers*). I am sure that we all must have felt the value of Mr. Hill's ability, industry, integrity, and singleness of purpose, throughout his career in connection with our College. (*Cheers*). He is a man of no common order, and I hope and trust, therefore, before Mr. Hill finally quits office, that he will receive an official vote of thanks through the Council. In the mean time, I propose a vote of thanks to Mr. Hill, for acting as Honorary Corresponding Secretary, from the commencement of the institution to the present time. (*Loud applause.*)

The Chairman.—I need not put that motion, gentlemen. It is carried with universal approbation. (*Cheers*). But, gentlemen, you have placed me rather in a difficulty to-night. When I speak of the

merits of others, I can offer a few words of praise; but when I come to return thanks for myself, I find the expression of my sentiments difficult of utterance, because I wish to steer clear of egotism. I assure you, however, sincerely, that I have had the College of Dentists perpetually at heart. Day and night it has been in my thoughts how I could best promote its interests, and whenever an opportunity has served for doing so, I have not let it slip. (*Hear, hear*). I have been single-eyed in all that I have done, and my desire has been, to put before you, in a tangible shape, the result of my exertions. I believe that I have gained the good will of my fellow Members in the Council, and if it be your pleasure to elect me to the same office that I have held before, I shall have great pleasure in fulfilling the duties of that office in the same manner as I have hitherto done, looking only to the interests of the College, and not of myself. (*Cheers*).

Mr. Hill.—The kind remarks of Mr. Hepburn have been as unexpected as they were undeserved. (*Cries of No, no*). I can assure you faithfully, that my connection with you has been to me one of consummate pleasure. I went down to the London Tavern in September 1856, before we called our first public meeting. I was then unknown to more than one or two of you; but since that time, my official position has brought me into communication with many of you; and it has been a source of unmitigated pleasure to me. I have endeavoured, in that position, to do my duty, and the vote of thanks which you have passed persuades me, that you are satisfied with my exertions. (*Cheers*). Some of the letters which I have been compelled to write have been of a character to inflict pain. Of course I was bound not to consider that, when the interests of the College were concerned; but I have endeavoured, as far as possible, to avoid wounding the feelings of those who were under the lash of the Council. I have too, pleaded hard for those who were in that position, and have had the good fortune, in some cases, to work a repentance. (*Cheers, and a laugh*). The position which I occupy now is rather strange. I thought it my duty, some time since, to retire from the office which I held in the College, because I felt conscientiously that I could not work with the Council when my acts had been nullified by the vote of a general meeting. I felt that I had not the confidence of the whole of the College, although I believed that I had that of the majority; because I was persuaded that if we canvassed the country, the amalgamation would have been carried, even on the terms proposed; and I think now, if the votes be taken by proxy,

that such will be the result. (*Hear, hear*). Whatever may be done, however, in that or any other respect, I trust that the status and prospects of the profession may be the chief consideration. I do not think that we are bound by any moral tie to support an institution which will not work out the good of the profession; and I confess, that in my opinion, a great opportunity of doing more for the profession than any other measure could accomplish has been thrown away. (*Hear, hear*). Under these circumstances, I stand before you to-night much indebted for your kindness, and I can only add, that I shall always take a warm and lively interest in any institution which has for its purpose the improvement and elevation of a profession which I very much love. (*Cheers*). With respect to the vote by proxy, I find that at the meeting which took place at the Freemasons' Tavern on January 6th, 1857, there was a draft of a by-law proposed to the effect, that the privilege of voting by proxy should be given to members residing beyond twenty miles from the General Post Office. I mention this, to shew that the subject has already, to some extent, engaged the attention of the Council. (*Hear, hear*). For this expression of your kindness I beg to thank you. (*Hear, hear*).

Mr. Underwood.—I have very great pleasure, especially as an antagonist of that gentleman's, on the question of amalgamation, a question, however, which I hope will be reconsidered, in proposing a vote of thanks to the gentleman to whom we are indebted for the organization of this College. (*Cheers*). I think that there are very few men of Mr. Rymer's age who can look on so great a work accomplished, as has been the result of his labours. (*Cheers*). When we take into consideration the position of our profession at the commencement of this movement, and when we reflect that we have now upwards of 300 members enrolled in this Society in the first year of its existence, I think that Mr. Rymer's position is a very proud one. (*Cheers*). But I regret to say that this offspring of Mr. Rymer is, at this moment, in an extremely critical position, and for his sake, therefore, as well as for the sake of the College, I hope and trust that the matter of the amalgamation will be re-opened, in order that those who are not resident in London, but who are decidedly in favour of a particular course of action, may be allowed to record their votes; and that Mr. Rymer, who has ever shewn such singleness of purpose, will use his influence to see that that course is carried out, and that opportunity afforded to all country members. (*Hear, hear*). From personal intercourse with Mr. Rymer, I am bound to say, that I have ever found him most indefatigable, most zealous, and ever

courteous in his communication with the members. I have, therefore, the utmost pleasure in asking you to record by a vote of thanks to Mr. Rymer, your warm sense of his services to this Institution. (*Cheers*).

Mr. Tibbs.—I beg to second every word that Mr. Underwood has said. I had penned a very nice speech at home, and had committed it to memory in order to deliver it upon this occasion; but, I think that, somehow or other, Mr. Underwood must have purloined my manuscript, so completely has he expressed the sentiments which I intended to have uttered. (*A laugh*). As it is, I am left in the deplorable condition of being obliged to say "ditto" to all that he has said. (*Cheers*). I will only add, that if an additional motive for an amalgamation were required, it would be that Mr. Rymer should, not only now, but ever after, reap the benefit of his labours. (*Cheers*). I believe that that can only be done by our becoming a united society of dentists, because I am satisfied, that if we continue to be disunited, a third society will be started; and if that be carried to a successful issue, it will snatch from Mr Rymer the laurels which he has most justly earned. I am sure that this vote will be carried by acclamation. (*General applause*).

The vote having been carried as suggested,

Mr. Rymer said—I return you my most heartfelt thanks for the very kind and courteous manner in which the motion of Mr. Underwood has been received; and I must thank Mr. Underwood and Mr. Tibbs for the eulogistic and more than flattering terms in which they have proposed and seconded the motion. As regards the question of amalgamation, that is the most important point before us. Mr. Underwood has stated, that we have only differed on one question of any moment, and that was the question of amalgamation. In that matter, I feel that I have taken the only course that was open to me. It was my conscientious conviction that the dental profession should be independent of any other body, and therefore I opposed the terms which were proposed to us. Since the last meeting, it has come to my knowledge that it is an undoubted fact, that the majority of the Members of the College, although they do not approve altogether of the terms, yet think that it would be for the benefit of the whole body that they should be accepted, rather than that the profession should be disunited, and should continue as at present. Under these circumstances, I shall use my influence with the Council to call another meeting, to reconsider this question. (*Cheers*). Of course, by that time, the country Members will vote by proxy, and

If the amalgamation should then be carried, I shall bow with the greatest pleasure to the will of the majority, and shall do all in my power to carry out their wishes. (*Renewed applause*). I shall have great pleasure in co-operating for that purpose with my friends, the President, the Vice-Presidents, the Treasurer, and the Members generally ; and I cannot omit expressing my great sense of the kindness which I have received from Mr. Hill, for he has really been the working secretary, and I feel, therefore, deeply personally indebted to him. Once more I return you my most sincere thanks. (*Cheers*).

Mr. Tibbs.—If I could persuade those gentlemen who have retired from the College to continue in office, or rather to withhold their resignation until this amalgamation shall have been finally decided, a great point will have been gained. (*Loud and unanimous applause*). Their resignation was given in because the amalgamation was not carried, and there seems to be a general feeling that, when the opinion of the whole body of dentists shall be taken, the decision of the former meeting will be reversed. For this reason I look upon the proxy question as one of great importance. I can come to London ; but there are hundreds of men in the country who cannot do as I do, and although they cannot come here to vote, I know that there is not a professional man in my neighbourhood who does not desire an amalgamation, even on the terms proposed, although they are not all that could be wished : but the feeling prevails—and it is a just feeling—that we must give and take. (*Hear, hear*). I hope that all present will, under these circumstances, unite with me in requesting those who have tendered their resignation to withhold it until the question shall be properly settled by the whole body. Now, all who desire those gentlemen to remain with us, hold up your hands in signification of your wish (*Cheers*).

Every hand in the meeting was held up.

Mr. Mackenzie.—I beg to second the proposition of Mr. Tibbs, and if you will permit me, it shall be put as a regular resolution. (*Cheers*). I, as one of the strongest opponents of the amalgamation on the terms proposed, reiterate the words of Mr. Rymer. I opposed those propositions because we were elected, first of all, to carry out the laws of this College and its Institutions. I am aware that the Members present at the last meeting were not sufficient to determine finally upon the acceptance or rejection of the terms proposed, and I certainly did not think that the vote of the general meeting would have resulted in the retirement of the President from his office. But

the question seems to be capable of being reopened, and if it should appear to be the opinion of the majority that an amalgamation should take place, we shall feel ourselves relieved from any duties that we were pledged to. I therefore second the proposition of Mr. Tibbs, that these gentlemen be requested to withhold their resignation until the amalgamation question shall be finally settled (*cheers*).

Mr. Lintott.—Upon the amalgamation question, I voted entirely on principle; because, I always understood that we were to be a perfectly independent body. Still, if we had the union which we all so much desire, I believe that we could carry out our educational plans quite independently of the College of Surgeons.

The Chairman.—I never rose with greater pleasure than I do now to put this motion (*cheers*). Nothing can give us greater delight than to find that our old coadjutors will come amongst us again; for no one can know so well the value of those gentlemen as those who have been in Council with them. They are so experienced, so able, and so earnest, that I really know not how we should go on without them (*cheers*).

The motion was then put and carried unanimously.

Mr. Robinson.—It is always more delightful to have a vote of thanks than a vote of censure; but on this occasion, I rise with great diffidence, inasmuch as I am now requested to represent the Delegates and those Members who have resigned. After the vote which has just been passed in so gratifying a manner, I think that I can take it upon myself to say, that we will, one and all, most faithfully go hand in hand with you, and will help the College in every possible way (*loud cheers*). But, it must be remembered that we undertake office again upon the same conditions as those on which Mr. Tibbs remains with you. It is the amalgamation that we desire to see carried; for we are persuaded, either that it must be carried, or that a third institution will spring up, which will end in our all becoming divided again. I am quite willing, then, as far as I am concerned, to retain office on those conditions (*cheers*). I can speak, also, for two other Delegates, and I believe that I may likewise speak for the other Members of the Council. At all events I will be godfather to them, and will take the responsibility on my own shoulders of withdrawing the resignations which have been sent in by the Vice-President and country Members (*cheers*). We now go on, then, upon these terms:—If we are beaten by proxy upon the amalgamation question, we consider ourselves open to take any course we please; and if we

should not be beaten, we shall join in any and all measures to advance the interests of the associated Members, and of the profession at large (*cheers.*)

Dr. Purland.—There is only one thing now that remains to be done; and that is for Mr. Robinson to take the chair, and to dissolve the meeting (*cheers*).

Mr. Matthews, amidst general applause, then gracefully retired from the chair, and conducted Mr. Robinson to the vacant seat.

Mr. Tibbs proposed a vote of thanks to Mr. Matthews, the Chairman of the evening, declaring that he had never seen a chairman more "up" in his duties, at once affable, courteous, and firm (*cheers*).

Mr. Robinson seconded the motion, and it was carried unanimously.

On the motion of Mr. Sasse, seconded by Mr. Tibbs, a vote of thanks was passed to Mr. Fox, the Curator, and the proceedings were brought to a close by a resolution proposed by Mr. Rymer, seconded by Mr. Hartley, and unanimously carried, adjourning the special meeting for the alteration of the by-laws to a day not named.

MONTHLY MEETING, February 2.

THE PRESIDENT IN THE CHAIR.

Mr. Felix Weiss read the following Paper on the Manufacture and Application of Gutta Percha to Dentistry:—

Mr. President and Gentlemen.—In bringing before you a paper on "the Manufacture and Application of Gutta Percha to Dentistry," I fear I shall require all your kind indulgence; and, indeed, were it not for the very liberal assistance I have received from many of the most experienced Members of this College, I should have felt considerable timidity in introducing the subject at all. But, in our at present comparatively imperfect knowledge of the many uses to which this valuable material may be applied, I consider that we cannot do better than solicit a statement of the experience and opinions of all those who have given it their attention, and the more so, as so much of our reputation depends upon the durability of the materials we are constantly called upon to recommend. Should the dentist introduce to the notice of his patient a material he considers applicable to their particular case, but at the same time with an honest statement of its

imperfections, and that material prove, by experience, more perfect than was anticipated, he gains for himself credit, and establishes a confidence it must be our highest ambition to merit; but, should he, on the other hand, highly extol that of which he has no experience, resting his convictions simply upon the assurance of one, perhaps, as inexperienced as himself, the danger to his reputation is very great indeed, and he had better have continued in the beaten track, with honour to himself and safety to his patients; but, thanks to the spirit of emulation that is among us—thanks to the formation of this College and the opportunity it gives us freely to lend our experience and impart all those little trifles our daily practice brings before us—I say, thanks to these advantages, we can no longer collectively be deceived; and if we are, *individually*, it is because we have rested too much upon our own knowledge, instead of submitting our views to the calm consideration of the many,

These remarks apply particularly to the subject of my paper, for this material, Gutta percha, I must freely admit, offers many temptations to the young, the hasty workman, and the charlatan. Gutta percha may be likened to putty in the hands of an unskilful carpenter. Should a side block be inaccurately let down, line it with gutta percha: should a plate be carelessly fitted, line it with gutta percha. Teeth may be raised on it, and, indeed, it may be applied to disguise every imperfection, and yet the piece of work be worn by the patient with comparative comfort. But let me here remark what is known to all—nothing can compensate for inaccurate fitting; nothing will excuse carelessness of construction, and nothing, in the eyes of an honest practitioner, atone for a want of scientific arrangement and workmanlike finish.

I shall divide my subject into four heads:—

1. The manufacture of gutta percha.
2. Its application to dental mechanism.
3. Its great use in temporary pieces, and in cases of emergency.
4. General remarks upon its durability, &c.

Gutta percha is imported into this country in the form of large blocks, of more or less purity. Some are so incorporated with dirt, colouring matter, and woody fibre, as to be unfitted for the dentist's use, unless previously submitted to a chemical operation.

Its mode of preparation is either by solution and after-evaporation, or by boiling in water and mechanically removing its impurities.

In preparing it by solution, all that is necessary is to confine small portions in a piece of fine linen, and place the whole in a bottle of chloroform, or other fluid which will readily dissolve it; pour off the clear solution and evaporate. It is placed in linen to free it from pieces of bark, wood, and other impurities, which are so large as to be separated by filtering, and with which it is generally found mixed. I prefer, however, to take the gutta percha which has been previously boiled and cleaned. I shall not dwell longer on this mode of preparation, for, unless we gain a greater amount of durability, I cannot see upon what principle we should advocate a process, not only expensive, but also exceedingly tedious: to this point, I shall, however, again return at the end of my paper. The second method of preparing gutta percha, is as follows:—Select a block, which, upon being cut through, presents a white surface; and I may here remark, that were the consumption in any way considerable, I feel convinced it might be collected with greater care, and save a vast amount of time and labour.

Take a piece weighing about two or three ounces, peel off with a sharp knife the outer rind; do so freely until you have removed the light brown covering. I prefer doing this before boiling; place it in an enamelled pan or glass vessel, and boil it freely; it is much more convenient to do this over a gas lamp constructed for the purpose: after it has been boiling about five minutes, take it out, and examine the outer side to see that you have cut away all the rind, and commence kneading it into a sheet. If the gutta percha is a fine specimen, it will assume a creamy white appearance, free from specks, and after boiling once or twice, and kneading, may be mixed with a small portion of carmine. Some object to the use of this colouring agent, as it is said not to keep its colour so well as the purest forms of rose pink.

But it frequently happens that a block cannot be obtained so pure, and it will then be necessary to draw it out until it is as thin as paper; and by holding it up to the light, every little speck may be detected, and must be carefully cut out, and when thoroughly washed and kneaded, may possibly still remain one shade darker than the preparation first mentioned. It is hardly necessary to add, that in all operations with gutta percha, the greatest attention must be paid to cleanliness; every vessel used should be perfectly clean, and the gutta percha not handled more than necessary. One peculiar property is the darkening influence of air, light, and heat. After the fourth or

fifth washing, every application of heat has a tendency to darken it, and a piece, which presented an excellent appearance when first prepared, may, after exposure to the light and air for some weeks, get many shades darker, and will assume a motley appearance; this some endeavour to prevent, by keeping it in water and in the dark, although by doing so its colour is neither improved, nor its disagreeable smell in any way corrected. After being carefully prepared, I have found it better simply to enclose it in two or three folds of paper, although it is advisable not to make it up in too large a quantity at a time. Generally the whitest specimens are the most disagreeable in smell; indeed it is very rarely that the brown gutta percha has any smell at all; but this can be removed by washing and free exposure to the air, in thin sheets, for a few days.

The method of applying gutta percha to mechanical work is so generally understood, that I shall not detain you very long in describing it. Having taken your model, and run it in plaster, the first thing is to cast one in zinc. You then take a piece of sheet wax, of the thickness you wish your gutta percha to be when finished (that used by wax-flower makers will do very well for the purpose), generally about the thickness of half-a-crown will be sufficient, but this must depend upon the case. You place the wax upon your plaster model, and cut it to the size you wish your plate to be, then bevel the edges, so that the line of the plate on the gum may be only the thickness of the gold. This model you cast in zinc also, and make your plate to, so that when the wax is taken away, you have a space underneath to receive the lining of gutta percha. Into this space you spread a small strip of platina wire gauze, which must be soldered round the edges; you then mount your teeth and blocks in the ordinary way. When the case is completed, and the teeth all fastened on, you take a sheet of gutta percha, and having well softened it in hot water, press it into the plate; then wet the zinc model first taken, and with considerable force press the set well down into its position—you may have occasion to soften the gutta percha in water many times, to do this effectually; afterwards, with a knife warmed in the flame of a spirit lamp, or a gas lamp, burning a mixture of air and gas, trim off all that is superfluous. It is necessary to cut clean, and do not attempt to drag the gutta percha. Considerable nicety is required in the trimming. Sometimes the gutta percha, and particularly in lower sets, is brought round the fronts of the teeth, and nicely trimmed round them; the work, before being placed in the

mouth, requires to be warmed in hot water, which allows the gum to take the last fine fitting; and when all is completed to your satisfaction, polish by gently rubbing with the thumb all those parts which have been cut with the warm knife. If this is nicely managed, with a little practice, a beautiful polish will result. It is necessary to see that no straggling ends remain, but all should be finished off to the greatest nicety. Now all cases, upper or lower, are modifications of this arrangement. Sometimes, in lower sets, the gutta percha is brought round the backs of the teeth, as well as the front, so that no plate at all is seen; but generally, both in upper and lower cases, it is well to let the plate be exposed at the back of the teeth, as the gutta percha is more liable at this part to be abraded.

Modifications of this arrangement will be readily devised by any practical dentist; for instance, some might prefer, instead of the wire gauze, using a lining of thin plate, perforated with a number of holes —at the same time, as it offers a hold for the gutta percha, serves to strengthen the plate.

We may require to use the gutta percha for bands alone; this may be done by turning a thin piece of plate into the form of the letter C and with this making a band, so that the open side may receive the gutta percha, or a piece of oval tubing may be used instead, and by afterwards cutting a portion from the inner side, an opening will be made, which will securely hold the lining of gutta percha.

Gutta percha will be found, in some cases, of the greatest use in pivoting stumps, which have become mere shells. Where the hole is very large, the pin should have a small strip of fine wire gauze soldered round it, and the hardest description of gutta percha well pressed into its meshes; if the cavity be smaller, the pin should be split, by sawing it down the centre, and fining off the ends and soldering them. After being accurately fitted and the superfluous gutta percha cut away, the stump should be wiped out, and painted with a solution of gutta percha in chloroform, the plug slightly warmed, *without using water*, and driven into its place. I have seen a pivot thus fixed remain perfectly secure for a twelvemonth, after all other modes of pivoting had become useless.

Although my experience does not warrant me in advocating the application of gutta percha to bone for permanent sets, yet it is so invaluable for temporary purposes, this paper would be hardly complete without some allusion to it. Holes should be drilled about one-eighth of an inch in depth, in that part of the bone intended to be lined;

some caution must be exercised in drilling only into the thickest portions of the bone, underneath the blocks, &c.; each of these holes should be slightly excavated, so as to form a cavity, into which the gutta percha may be driven, but from which it would be difficult to draw it. These cavities should then be separately stopped with warm gutta percha, and the bone kept perfectly dry. A sheet may then be softened at the fire, or over a lamp, and applied to the bone, which has been previously warmed; by this means the gutta percha may be made to hold to the bone with considerable firmness. My reasons for not advocating its general adaptation will be given hereafter.

I have now, I think, very briefly alluded to the different classes of dental mechanism, to which gutta percha is more generally applied, and unquestionably the preference must be given to that composed of gold and gutta percha, more particularly in lower sets; but it is in temporary pieces, and in cases of emergency, that its great value will be found. While the gum is absorbing, and the mouth changing, it furnishes a material which can be modelled and remodelled at very little cost or labour, and secures for our patient a well-fitted piece of work throughout the long and tedious interval, between removing teeth and fixing in artificial ones permanently.

I shall now take the liberty of drawing your attention to four classes of patients, for whom gutta percha offers advantages they could not in any other material with which I am acquainted obtain.

The First, is the case of a gentleman who suddenly breaks an upper bone set; he has to attend to an appointment of the greatest importance in two hours time; he has to speak, and he cannot do so without his teeth. In the greatest distress he begs that you will endeavour to do something for him. The bone is so softened, no rivets will stand, and it is a hopeless case. Having taken a model, see whether among all the bone pieces you possess (and we most of us have a number of carved sets, the practise of our younger days) you can find anything like the upper he has fractured. It is of little moment whether the teeth are carved, or set on, so that it is perfect; having found such a piece, rough it to the model, drill your holes, and fix in the gutta percha lining, warm and fit it to the mouth, carefully cut down your bite, and your case is completed. In one hour and a-half your patient may be restored to comparative comfort; he can at least speak, and keep his appointment; you have plenty of time given you to make a new set. I succeeded so well in a case of this description,

that my patient declared he had not suffered one moment's inconvenience.

Second. A person wearing a large upper gold plate, with several teeth, loses the supporting tooth on the one side; the plate will not hold up, and they are consequently seriously inconvenienced. Drill a number of holes, about the eighth of an inch from the edge of the plate, sink them a little in the face, also drill a few holes between the teeth; with a pair of pliars bend the edge of the plate slightly towards the gum, so that it may not feel too thick at the edge, and proceed to press in a lining of gutta percha, trim with a warm knife, and see that the gutta percha has passed through the holes, which secure with a hot iron. The gutta percha having been softened, the plate must be carefully placed in the mouth, and may require a little trimming afterwards.

Third. We have all found cases in which the mouth has become so contracted, that taking models has not only been a very troublesome, but a very painful task. In one case the lady had found such difficulty, even in removing the set from the mouth, that she let it remain there for months together, and the mouth had eventually become so contracted, it caused her the greatest agony in attempting to take a model, the jaw being unusually large. In this case, models were taken from the set in wear—a gold one, and a gutta percha set made, which, as it took its own finishing impression, answered admirably.

Fourth. A gentleman suffering from chronic bronchitis, the moment the wax was put in the mouth, was attacked with the most alarming coughing and reaching, compelling you to desist; and a set had to be constructed in gutta percha from models taken ten years ago, yet when completed was perfectly successful.

These, gentlemen, are a few of those troublesome cases we sometimes meet with, and I cannot too warmly extol the advantages possessed by gutta percha, in overcoming difficulties of this character, its ready adaptation, the simplicity with which any degree of elevation can be obtained, its lightness and accuracy of fit, cannot be too much praised; would that we could also add its durability; and this brings me to that head, which I must consider the most important of my subject, and it is here, gentlemen, I beg of you to assist me—to give to the profession the experience of each individual practitioner, and this I conceive to be one of the great advantages we possess at the present day; meeting together, our aim should be, the diffusion of all

those little minor facts, which united, approach perfection. That the subject of my paper deserves your deepest attention, is exemplified in the different opinions entertained by different practitioners. A Member of your College, holding an excellent position, with every opportunity of testing the properties of the material I am calling your attention to, writes, that in every instance he has used gutta percha, he has been greatly disappointed, and dwells strongly on its many disagreeable qualities. Another equally well informed Member assures me, that in no case has gutta percha been otherwise than perfectly successful, and he feels quite justified in recommending it for a certain class of cases. I feel convinced, that the time has arrived, when the question—Is gutta percha to be recommended?—can it be employed in the mouth with benefit to the patient, and credit to the practitioner? should receive an answer. Gentlemen, I unhesitatingly declare, that could gutta percha be prepared, which would stand the test of a number of years in the mouth without change or unpleasantness, it would surpass every other material where its bulk is not against it. How immeasurably superior to bone—how much easier to manage!

In carefully sifting the evidence I have been able to obtain, united to my own experience, I have come to the conclusion that in its present form, gutta percha cannot be recommended as lasting more than from two years to two years and six months, in the generality of mouths. I consider it necessary that it should be renewed every two years, or three years at the outside; but in this remark I am alluding to the soft white gutta percha prepared simply by washing; and here again we are in doubt, some considering the soft as more durable than the hard. Mr. Jacobs, of Bridgewater, has most kindly forwarded to me several specimens, prepared by solution in chloroform, and he has particularly observed, that the white specimens of gutta percha are much the softest, and as he believes the less durable. He is inclined to think that the gutta percha purified by solution in chloroform would be more durable in the mouth than the raw material, as containing no extraneous matter, and being solid, homogeneous, and free from all porosity. Now does the fact of its being purified by chloroform free it from all porosity? I should say not; it may lessen it, but its general character must remain unchanged. Under the microscope I cannot discover any structural change; both that prepared by washing, and that by solution in chloroform, present the same dense close texture. It appears to me, that it is its porosity consti-

tutes its greatest drawback. From the experiments I have made, and the opinions conveyed to me by some of our most experienced practitioners, I am led to believe, the liquids of the mouth and finely divided particles of food, become so impregnated in the gutta percha, as to cause the very disagreeable smell it sometimes acquires. I have my doubts, whether gutta percha is decomposed in the mouth. The lining of a plate which had become very foul, and the surface slightly abraded, having been worn a little over two years, was boiled and kneaded up several times; it lost its disagreeable smell entirely, and excepting in being some shades darker, appeared very similar to when placed in the mouth. I have seen a plate lined with gutta percha, that had been worn constantly for two years, and yet was not in the slightest degree tainted; but we know how differently bone is affected in different mouths, and gutta percha must be similarly tested. Bone, in contact with gutta percha, decomposes most rapidly, and the reason of this can be easily understood; when the bone becomes thoroughly moistened, it has a tendency to recede from the gutta percha, it becomes slightly expanded, finely divided particles of food get between, and decomposition sets in rapidly.

I cannot advocate the use of gutta percha bands; no matter how constructed, they appear to have a tendency to cause sensitiveness of the necks of the teeth, and accumulating as they must do, particles of food, cause them to decay much more rapidly. In conclusion, gentlemen, if I might be permitted to suggest what I should consider the most durable, and the best suited for applying to dental mechanism, it would be the finest gutta percha, thoroughly purified, and mixed with silica, or some other ingredient as recommended by Mr. Jacobs. He informs me, that as a stopping, he has used it from six to seven years, he has seen many cases done three or four years ago, and which still remain quite perfect. If this form of gutta percha will stand in a tooth, why not applied to mechanism? As a stopping for children's first teeth, gutta percha, somewhat similarly prepared, I have repeatedly used with the very best results. Let us then unite the experience we have each of us collected, add item to item, and believe me, the period is not far distant, when gutta percha may be placed in its true position, either added to our stock of every day materials, or cast aside as useless. In thanking you, Mr. President and gentlemen, for the kind attention you have given me, I cannot conclude, without at the same time, thanking those members of your College to whom I have referred, and by whom I have been received

with the greatest cordiality, more particularly, I would thank Mr. Faulkner. The time was, when we may have had secrets among us, or at least we fancied we had; it should now be our proudest endeavour to dissipate all such antiquated notions, and by the readiness with which we lend our experience, raise our profession to its true position.

I must apologize for the cursory manner in which I have been compelled to run over the subject. I cannot claim for myself praise, as having introduced any novelty, or enforced any new application, but I feel every satisfaction in having introduced a subject, worthy, I am convinced, of the attention of every Member of our profession.

DISCUSSION.

The President said, that gutta percha, for dental purposes, was introduced in America about ten years ago, and he believed it had received a very general trial by practitioners there. He had used gutta percha combined with silica, as a temporary stopping for children's teeth, and for such purposes he had not the slightest hesitation in pronouncing it invaluable.

Mr. Rymer inquired, whether Mr. Weiss made use of gutta percha as adapted to artificial teeth generally, or only in specific cases?

Mr. Weiss. Not for general purposes.

Mr. Fox thanked Mr. Weiss for the manner in which he had brought forward his paper, and remarked that the meeting was as much indebted for the method the essayist had adopted, as for the interesting subject matter itself.

Mr. W. G. Bennett said, in using gutta percha, he had observed two varieties; one would work with a smooth surface, the other always appeared somewhat rough and rotten. Could Mr. Weiss inform him of any ready means of converting the rough variety into the smooth?

Mr. B. also observed, that he remembered three cases in particular, in which gutta percha had been applied to bone, and where it appeared to exercise rather a preservative than a destructive influence. The first case was a bone lower piece for two incisors, and the molars on each side; this piece was lined with gutta percha at the part in contact with the necks of the remaining teeth, and also the gum under the incisors and molars. About a dozen holes, the size of the tubes of mineral teeth, were drilled in the bone, and countersunk.

A mould was made of plaster of Paris, hardened with white wax, and fixed into two iron frames, connected by guide-pins, and acting in the manner of ordinary casting frames. The mould, with the bone piece, and softened gutta percha in it, was then submitted to the action of a powerful screw-press. When this piece had been in the mouth for at least six months, the gutta percha adhered closely to the bone, and there was no sign of decay at the parts where the bone and gutta percha were united.

The second case was an entire upper suction piece; eight teeth in front were mounted on platina, with continuous gum, a solution of gutta percha in chloroform was applied between the bone and the platina. In this case, the bone was much better preserved than when a solution of mastic, in spirit, was used.

In case the third, a like solution of gutta percha was placed under the side blocks of a gold upper piece, which had been repaired; when it was observed some months afterwards, the blocks were quite sound, except at about a quarter-of-an-inch of the edge of one of them, where the gutta percha appears to have been accidentally omitted.

Mr. Rogers said, that he always used gutta percha, and he did so, from the perfect success he had been fortunate enough to obtain; with regard to its durability, he had been able to test that, and could mention a case where it lasted six years, which he considered ample time. The failures which had attended its use by many practitioners, arose, no doubt, from the impurity of the material employed, for he knew that the depôts did not furnish gutta percha so pure as it might be. He had not found the inconvenience alluded to by some arising from the offensive smell they described, and this he also attributed to the genuineness and purity of the gutta percha. He might stand alone in his opinion; but it was his opinion, nevertheless, that Dentists did not succeed in fitting the mouth—they caused the mouth to fit the plate, but he maintained, that they did not positively and actually fit the mouth; but where gutta percha as a lining to the plates was employed, this very desirable end was very readily attained.

Mr. Harley said, he did not like gutta percha at all; he had always been able to work both gold and bone to the advantage of his patients, and he considered this new material altogether unnecessary. It might do very well to patch up slovenly work, and rectify misfits; and he believed, that in such cases, bad workmen would would use it.

Mr. Purland objected entirely to Mr. Rogers's remarks respecting the fitting of the mouth—he had always been able to fit his patients' mouths; in fact, he rather prided himself upon his ability to do so, and he should very much question, whether a model could be produced which he could not fit. With regard to Mr. Harley's remarks, he begged to say, that he invariably took two models, one of which he retained in his own keeping, and by which he tested the fit after the piece had left the work-room, which entirely prevented his being deceived.

Mr. Hill said, that like all other novelties in the profession which he had been able to obtain, he had endeavoured to give gutta percha a fair trial, but he could not say that he was very much satisfied with the results. The material he employed had been purchased at the depôts where he had hoped to obtain the best; whether it might be impure, as Mr. Rogers had stated, he could not say; but he had found it highly offensive after it had been in the mouth a very short time. In one instance, he noticed a remarkable coating of tartar upon the lower frame-work of a piece lined with gutta percha, which did not appear in the companion piece made of gold and mineral teeth; and from this he gathered, that the porosity of gutta percha was its chief drawback, allowing, as it did, the secretions of the mouth, and very fine particles of food, to find a lodgment about its surface. He only used it in temporary cases.

Mr. Rymer said, he had not had much experience in the use of gutta percha, because he had found the use of gold and bone to answer so well almost all the purposes of mechanical dentistry, that he considered these materials could scarcely be superseded. In some few instances, he had employed gutta percha for temporary purposes, but beyond this, he should not feel inclined to use it. In reference to the case alluded to by Mr. Weiss, of a person who had worn his old set of teeth so long that the lower broke just at a time when the wearer required an immediate repair, and that repair was rendered impracticable from the softness of the bone, he could only say that the patient almost deserved to be put to inconvenience, for having delayed so long having a new set.

Mr. Hockley said he had used gutta percha with very variable results, but he was compelled to admit, that when it had answered best, it was Mr. Truman's material that he had employed.

After some observations from Mr. Ghrimes in favour of the use of gutta percha—

Mr. Weiss, in reply, accounted for the diversity of opinions expressed by those gentlemen who had spoken as to the durability of gutta percha, from the fact of there being so many varieties ; and in answer to Mr. Bennett, remarked, that a very good method of testing its toughness was by biting off a small piece, which could be flattened out, even without heat, if the specimens were worth anything. He could not go so far as Mr. Rogers, and recommend its being employed in every case ; he considered it particularly applicable for complete lowers ; indeed, he would never think of employing any other material when there had been much absorption. He must differ from Mr. Harley ; his remarks might be applied to every new material introduced, and put a stop to the spirit of advancement altogether. Gutta percha would be found, by those who applied it, something more than a patch upon slovenly work, and he felt convinced both Mr. Hill and Mr. Hockley would have arrived at more generally favourable conclusions, had they prepared their own material. He wished distinctly to state, that when the gutta percha was pure, even though it did decompose in time, it was not attended with more unpleasantness than in the case of bone ; and he had not yet found one instance where the patient complained that the stomach was at all affected by that decomposition. Still, the opinion he had expressed in his paper had not been changed, and he should advise that the gutta percha be renewed every two years, if practicable.

A cordial vote of thanks was passed to Mr. Weiss for his able paper.

Some specimens of "Cast Plates" were exhibited by Mr. J. L. Statham, which were briefly commented upon by Mr. Fox ; after which, the meeting was adjourned to Tuesday, March 2nd.

SPECIAL GENERAL MEETING, February 9, 1858.

A Special General Meeting of the Members was held on Tuesday, February 9th, for the purpose of altering and amending Law No. 13, by adding the following—"Members of the College residing beyond twenty miles of Charing Cross, shall be entitled to vote by proxy for the election of Council and Officers, and all other questions of importance, at General and Special General Meetings."

Mr. Robinson, the President, who occupied the chair, briefly explained the object for which the meeting had been convened.

Mr. Peter Matthews, in moving that the addendum to the 13th Law which the Council proposed to submit this evening be adopted, observed, that the Members must be well aware that the intention of the alteration was, to enable the country members to record their votes upon the all-important question of amalgamation, and that he considered they were in justice bound to accord this privilege to the large body of Members who could not possibly attend to record their votes personally.

Mr. Underwood seconded the motion.

Mr. Mackenzie moved an amendment, to the effect that the proposed alteration be postponed until the amalgamation had taken place

The meeting being a special one, convened for the purpose of considering a definite proposal, of which due notice had been given according to the 14th law, the Chairman ruled, that no amendment could be entertained.

A lengthened discussion ensued upon the original motion, in the course of which it was urged, that the system of vote by proxy would be found difficult to carry into effect, because country Members could not be correctly informed upon subjects to be brought forward without hearing the discussions upon them.

Mr. Matthews in replying, remarked, that whatever decision might ultimately be come to respecting vote by proxy, in the present case it was intended as a means to an end—that end being the settlement of the question respecting Amalgamation with the Odontological Society.

The Chairman then put the motion, which was carried with only one dissentient voice.

MONTHLY MEETING, March 2.

The President in the Chair—

The following Report was presented by Mr. Fox.

Museum and Library Report, March 2, 1858.

The following is a list of articles which have been presented to the Museum and Library of the College of Dentists since the last report, viz. :—

Three Models illustrating Mr. J. L. Statham's System of Plate Casting.—Presented by J. L. Statham, Esq.

Specimens of Decayed Teeth.—Presented by A. Dubois, Esq.

LIBRARY.

Toothach cured by the Electric Cautery, by J. H. Harding—Presented by T. H. Harding, Esq.

De l'Arrangement des Secondes Dentes.—Presented by A. Dubois, Esq.

Dix-sept Articles relatif aux Maladies des Dentes.—Presented by A. Dubois, Esq.

Memoire sur de nouvelles Dentes et de nouveaux Dentiers.—Presented by A. Dubois, Esq.

A paper was read, entitled "Statistical Description of Decay of the First Molar." In the unavoidable absence of the author, Dr. Reid, of Edinburgh, Mr. Hepburn read the paper, as follows:—

ON THE DECAY OF THE FIRST MOLAR,

By Dr. Reid.

Those who have turned their attention to what may be termed the rotation of dental decay, that is, the order in which the permanent teeth disappear, must have observed that of the eight classes to be found in the adult mouth, none seem to be so perishable as the first molar, the six-year-old tooth. Writers on the statistics of dental disease, may differ from each other in their calculations as to the relative predisposition of each class to abnormal condition requiring treatment, yet they all agree on one point, namely, the fragility of the first molar, in its non-resistance to the inroads of disease.

It is proper here to premise, that, if in dealing with the subject under discussion, the conclusions arrived at, differ materially from the statistics of other writers, it must be held to arise from the difference in the circumstances under which the investigations have been conducted. Private practice affords but few facilities for the recording of observation. The routine of professional duty would suffer too great an interruption, were we to sacrifice valuable time in noting cases as they occur in daily practice, and in but few instances would the faithful return of the patient, enable us to follow out those investigations which are necessary to be pursued, ere we can do else than merely speculate upon points which as yet have not been made the subject of scientific enquiry. Thus have those, desirous of investigating disease, been driven to do so by the aid of hospital or dispensary practice, embracing cases in patients belonging to the lower

classes of society, where the enquirer must lack the opportunity of watching the condition of such mouths as come under treatment, the patients of to-day seldom making their appearance again; moreover, the mode of treatment being necessarily narrowed into the mere surgery of the teeth.

The circumstances under which the conclusions hereafter noted were arrived at, differed in many respects from those above alluded to; eleven years of professional attendance on the young ladies of the Merchant Maiden Hospital of Edinburgh, affording facilities for treatment and observation such as rarely fall to the lot of the dental practitioner, the mode of treatment differing in no respect from that pursued in private practice, except in the substitution of a less costly material than that generally employed, in cases of stopping.

I may here remark, that the Merchant Maiden Hospital is an *educational* institution, constituted by Act of Parliament, and dedicated to the maintaining and educating the daughters or grand-daughters of retired, or deceased burgesses of the City of Edinburgh, to the benefits and privileges of which institution, about one hundred, betwixt the ages of seven and seventeen are admitted.

With these explanatory observations, I shall proceed to take up in succession, the points that bear on the subject under discussion.

By the appended table, it will be seen, that during the above-mentioned period of eleven years, the gross number of operations performed on teeth of all classes, amounted to 1400. Of these, 855 were stoppings, (807 being permanent, and 48 preparatory), 470 were extractions, (411 being milk teeth, and stumps of the same, 59 being permanent teeth, stumps of the same, and supernumerary teeth), the remaining 75 being minor operations, such as excision of carious dentine (where a discharge of pus indicated the danger of stopping the cavity,) removal of salivary calculus, scarification and arresting of hemorrhage.

Of the 807 permanent stoppings above noted, 66 were milk teeth that circumstances rendered necessary should be retained in their places as long as possible, and 741 were permanent teeth, of which last mentioned number we shall forthwith treat.

In apportioning these 741 permanent stoppings among the various

teeth, taking them according to their proximate position in the jaw, and starting at the mesial line, we have of—

Central incisors	18
Lateral incisors	22
Canines	2
First bicuspids	22
Second bicuspids	13
First molars	637
Second Molars	27
Total	741

the third molar being excluded from the calculation by reason of the late period at which it assumes its position in the maxilla, keeping in remembrance that we are treating of the adolescent mouth.

If the teeth are classified according to the order in which they take position in the jaw, it will be found by the table, that of the 741 permanent teeth stopped, no less than 637 were first molars; that is, of the seven classes so operated on, nearly 86 per cent. belonged to one class alone, and that standing first in the order of dentition.

Of the remaining six classes, the individual per centage is as follows :—

Central incisors	$2\frac{1}{2}$ per cent.
Lateral incisors	3 „
Canines	$0\frac{1}{4}$ „
First bicuspids.....	3 „
Second bicuspids	$1\frac{7}{9}$ „
Second molars	$3\frac{1}{2}$ „

or thereby, the fractional parts being put down in round numbers for the sake of brevity—the sum of the whole being 14 per cent. only on the gross number of stoppings.

Having thus shewn, on a given number of permanent teeth, the ratio of stoppings in each class, the point at issue will not have been properly met, until the whole number of first molars operated on is included in the calculation ; thus—

First molars stopped	637
Same class extracted	43
Stumps of same extracted	7
	687

which number represents the total of those teeth that had either been attacked, or altogether destroyed by disease.

As already shewn, the gross number of permanent teeth of all classes operated on, was 741; deduct from this the number of first molars as above given, and there is left 54 teeth, representing the six remaining classes in the adolescent mouth. Thus have we a per centage of nearly 93 in favour of the first molars. Again, while this class constitutes but a seventh part of the permanent teeth, developed at the age at which the inmates of the Merchant Maiden Hospital lose the benefits of that institution, or, in other words, while the first molars form but one-seventh of the whole number of teeth then developed, the ratio of mortality stands not as 1 to 7, but nearly as 19 to 20.

With the view to satisfy enquiry as to the periods of life at which these teeth are brought under the influence of disease, I have, by reference to the ages of those operated on, separated the 687 cases into five divisions, which may be termed periods of decay. These I have taken at the 8th year, the 10th, 12th, 14th, and 16th, being guided in this division by the ages at which the pupils are admitted to, and cease to participate in, the benefits of the Institution, and which, as already mentioned, are 7 and 17 years respectively. On the whole number of operations—

The first period gave	.....	247
The second „	.....	279
The third „	.....	91
The fourth „	.....	51
And the fifth „	.....	19
	Total..	687

It may be asked, how happens it that the numbers in the second period exceed those of the first, while, in others there is a marked and progressive decrease? The explanation is, that by the law regulating the admission of pupils, "it is provided that none can be chosen or presented who are under 7, or above 11 years of age;" and, as the greater proportion of those so admitted have already reached their eighth year, they consequently fall under, and swell the number of cases belonging to the second period.

While noting the small number of cases falling to the remaining periods, I would observe, that few as they are, circumstances have

tended to increase them, inasmuch as, were the years 1847 and 1848 kept out of the calculation, the proportion would have been considerably less, and that for the following reasons:—

During the two first years of my service in the Hospital, the patients operated on were principally among the more advanced pupils, they having suffered longest from a restricted form of practice, extraction having hitherto been the only recognised mode of dealing with the dental ailments incident to pupilage. Did I deem it necessary to adduce proof in support of this view, I should only point to the number of first molars extracted in 1847 alone, as shewn in the table, and which amount to 50 per cent. on the whole number of operations performed in that year.

In the title of this paper, the term "decay" is made use of in a general rather than in a particular sense, as being the remote, rather than the proximate cause necessitating removal, and as the origin of the various diseased conditions of the teeth incident to youth. As already shewn, with the exception of those noted for 1847, the proportion of first molars extracted was comparatively few on the whole number of those teeth operated on; any inquiry, therefore, into the causes that rendered extraction necessary, would, in so small a number of operations, have yielded but meagre information on the point, besides being apart from the subject under discussion.

An inquiry into the causes inducing diseased condition to the extent shewn in this class of teeth, may be satisfied by attributing them to diathesis—to the effects of disease in the system, acting on the teeth during their formation, as frequently met with in the granulated deposit of enamel—to want of constitutional vigour as shewn in the presence of acidity in the secretions of the mouth, operating unremittingly on the teeth, and ultimately effecting their destruction.

It would best be answered, however, by pointing, as a primary cause, to the small proportion of phosphate of lime entering into their composition. Were the several classes of teeth in any one mouth subjected to chemical analysis, I doubt not, it would be found that the quantity of calcareous salt contained in them, varied according to the order in which they assumed their positions in the maxillæ, the minimum portion falling to the first permanent molar. The subject has already engaged the attention of writers of high authority, some of whom have brought analytical chemistry to bear on the point, yet too limitedly to admit of being received as conclusive proof of this theory. Looking, however, to the results noted by Berzelius, Pepys, Lassaigne,

Von Bibra, and other experimentalists, it appears that the teeth of adults yield a larger proportion of the inorganic elements than can be traced in those of children. Rousseau comes still nearer the point. He subjects both classes of teeth, deciduous and permanent, taken from the same mouth, to analysis, and finds the larger portion of calcareous matter in those of the second dentition. It therefore may reasonably be inferred, that the first permanent tooth partakes of the nature of its predecessors in want of density, and consequent absence of resistant power when brought under the influence of chemical action produced by salivary acidity.

This state of the saliva I have frequently noted where the teeth presented an appearance as if chemical influence had been at work, subsequent observation shewing that even the substances employed in stopping had been similarly affected. Yet as time wore on, and the constitution acquired strength under the benign influence of careful tending, nourishing diet, and regular exercise, have I noted cases, that at one time held out but a discouraging prospect as to future comfort, improve as dentition advanced, the more lately developed teeth occupying and retaining their destined positions, unassailed by those agents that had worked the destruction of the deciduous teeth, and materially injured the earlier of the permanent set; and this, it may fairly be assumed, because they were no longer subjected to the malignant effects of salivary acidity.

Having alluded to the traces of chemical action found in the material used in stopping, I shall offer a few remarks on the point, although apart from that under immediate discussion.

The substance chiefly used was the cupreous amalgam known as Sullivan's cement, and although prepared by myself, and from the one formula, yet it presented varied appearances, according to the character of the mouth in which it had been made use of, rather than the length of time it had remained therein. The appearances were, deep black, greenish black, dusky brown, approaching to the natural tint of the metallic base of the stopping, and silvery white. With the first two colours, there was little trace of wasting on the surface, the stopping remaining undecreased in volume, and which I attribute to the secretions of the mouth being rather alkaline than otherwise. With the others there was a considerable diminution in bulk, especially in the last-mentioned. In such cases the presence of acid in the saliva was too evident to remain a matter of doubt, and which can easily be accounted for, on the principle of the strong affinity that saliva has

for oxygen, readily absorbing it from the air, and imparting it to other bodies, such affinity being dependent on the condition at the time of the fluids composing the saliva. The state of the crown stoppings could not be taken as evidence of this fact, seeing that to chemical action might be attributed that which was the results of mechanical abrasion. Such, however, could not be the case with lateral stoppings, where occasionally erosion, equally rapid and extensive, was to be found.

In a few of the last-mentioned cases I had, on operating on front teeth, employed the metallic filings now generally in use, but in no case did I detect any very decided appearance of wasting. It may therefore be inferred, that while the condition of the saliva, or, we may say, the peculiar acid to be found in it, acted on the one amalgam, it had no perceptible effect on the other; not that the other might not be similarly affected, were it exposed to secretions in which acid of a different character existed. On the whole, however, the investigation afforded favourable evidence as to the durability of the cupreous preparation, a quality that goes far to compensate for its tendency to cause discoloration.

In treating of the first molar, and proving, as I have endeavoured to do, its eminently periahable nature, and that at so early a period of life, I have confined myself to the consideration of that point only. Investigation might have been pushed further, and inquiry carried forward into advanced life, had opportunity for observation been afforded me, by the periods of decay being completed, which I have necessarily restricted to the 17th year. Thus might something like an approximation to positive liability to decay in the various classes of teeth, have been arrived at. A consideration of the decrements of life, in connection with the loss of teeth, might also have afforded interesting results. The relative tendency to decay in the upper and under maxillæ, also on the right and left sides of the same; the liability of the various surfaces of the teeth to be attacked by disease, and various other points of like interest, might have received consideration, had time permitted. All such subjects, however, I leave untouched at present, feeling that I would be but entering on a field of inquiry too vast in extent to admit of justice being done it within the limits of this paper, however much so interesting a discussion might have served to relieve the dry statistics with which I fear I have already trespassed too long on the patience of this meeting.

Dr. Reid also forwarded the following statistical statement.

TABLE OF OPERATIONS,

From 1847 *to* 1857 *inclusive.*

YEAR.	PERMANENT STOPPINGS.								PREPARATORY STOPPINGS.	EXTRACTIONS.								MINOR OPERATIONS				TOTAL.
										For Disease.		For Prevent. of Irregularity.										
	Cent. In.	Lat. In.	1st Bic.	2nd Bic.	1st Molar	2nd Molar	Tempy.	Canine		Milk Teeth	Stumps	Milk Teeth	Stumps	2nd Bic.	Supernum.	1st Molar	Stumps of 1st Molar.	Excision of Decay.	Scaling.	Scarification	Hemorrhage	
1847	2	2	—	—	11	—	—	—	—	6	—	—	—	—	—	23	—	—	2	—	—	46
1848	—	—	—	—	114	—	6	—	31	14	13	—	—	—	2	13	—	5	11	1	—	210
1849	3	4	2	4	70	1	23	2	11	2	14	16	7	—	—	3	—	3	13	2	—	180
1850	1	1	4	—	67	2	19	—	6	3	11	15	23	—	—	—	—	3	13	—	—	168
1851	3	4	3	—	37	2	—	—	—	9	12	26	5	1	—	—	—	—	5	—	1	108
1852	1	5	2	—	71	3	15	—	—	—	13	7	23	—	—	—	—	—	7	3	—	150
1853	3	—	2	—	36	1	—	—	—	—	15	4	7	—	—	—	—	—	1	—	—	69
1854	3	3	2	5	88	1	—	—	—	1	4	6	17	—	—	—	—	—	2	—	—	132
1855	—	1	1	—	52	8	3	—	—	9	38	10	3	3	—	3	3	—	2	—	—	136
1856	1	1	—	2	30	3	—	—	—	4	7	9	4	1	—	—	2	—	—	—	—	64
1857	1	1	6	2	61	6	—	—	—	1	15	34	4	—	2	1	2	—	1	—	—	137
	18	22	22	13	637	27	66	2	48	49	142	127	93	5	4	43	7	11	57	6	1	1400

DISCUSSION.

Mr. Perkins.—The paper of Dr. Reid is certainly a most interesting one; but being strictly statistical, I think there is little or no room for discussion upon it.

Mr. Mathews entertained a similar opinion, and moved a cordial vote of thanks to Dr. Reid for his valuable paper.

The motion was seconded by Mr. Rymer, and carried by acclamation.

Mr. Humby then read a paper on Mechanical Dentistry, which we shall publish in our next. His remarks were illustrated by various successful experiments.

The discussion on Mr. Humby's paper was adjourned to the next meeting in April.

The proceedings then terminated.

SPECIAL GENERAL MEETING, March 4.

A Special General Meeting of Members of the College was held on Thursday, March 4, the President in the Chair.

The Chairman explained, that the Meeting had been convened to reconsider the terms of amalgamation proposed by the late Delegates, as it was thought that the decision upon them, on the 8th of January, was given by, comparatively speaking, a small meeting.

Mr. Ghrimes moved, that the Terms be received: he had already expressed his opinion in their favour, and he did not think it necessary to recapitulate what he had said.

Mr. Sass seconded the motion.

Mr. Lintott considered that the meeting was not competent to take the Terms into consideration, because they were precisely the same as those which had been rejected. The thirteenth law was explicit on the point; it would be found, upon reference to it, that at every meeting of the College the resolutions of the majority must be binding.

Mr. Mackenzie and other gentlemen expressed a similar opinion.

Mr. Purland said, that the meeting being clearly incompetent to entertain the propositions, he should of course withdraw the amendments of which he had given notice.

The Chairman.—The meeting is dissolved.

Mr. Rymer, in proposing a vote of thanks to the Chairman, observed, that anxious as he was to see unity of action in the profession, and determined as he had been a few days before to support the amalgamation, he could not but rejoice at the result of the meeting, because he believed, that after the spirit displayed in the organ of the Odontological Society, there would be no unity of action; if the amalgamation had taken place, confusion would have become worse confounded. He suggested the mediation of Parliament, in settling the differences of opinion in the profession.

Mr. Tibbs seconded the motion, and stated, that he had been very anxious to bring about an amalgamation; but he confessed he was not so warm in the cause since he had read the current number of the Odontological Journal, for he should certainly not vote for the amalgamation, although he could not vote against it.

The Chairman having briefly acknowledged the compliment, the proceedings terminated.

MISCELLANEOUS.

DENTAL MEMORANDA.

By T. Purland, Dentist, Phil. Dr. Surgeon-Dentist to the Mesmeric Infirmary.

Continued from page 463, vol. I.

"Daily Advertiser, 1766.

"TEETH or STUMPS, though ever so low in the Gums, taken out in the easiest and safest Manner, (as Numbers in this Metropolis have already to Satisfaction experienced) all Disorders of the Teeth and Gums effectually remedied, and Teeth neatly Scaled, Cleaned or polished, by Wilson, Surgeon and Operator for the Teeth, from Norwich, at his house in High Holborn, facing Bloomsbury Market. His Dentrifice Powder, of many years established reputation, is sold at 1s. the Box. by Mr. Chase, Stationer in Norwich, and by the Author at his house as above, where constant Attendance is given, or waited on at their own Apartments.

"N.B. A Genteel First Floor to lett."

"PUBLIC ADVERTISER, 1769.

"TOOTH-ACH.

"All persons labouring under this terrible complaint, or who dread the return of it, may meet with a certain expeditious and lasting Cure without drawing, by a new and external Method, which never fails. And all persons who have ever experienced this tormenting Pain, (tho' at present free from it) and those who have never been afflicted with it, may be secured from ever feeling it, by Application at No. 9, in Nevil's Court, Fetter Lane.

N.B. Gentlemen and Ladies waited on at their own Houses.

"ST. JAMES'S CHRONICLE, June 16, 1770.

"VAN BUTCHELL's Real or Artificial Teeth, from one to an entire Set, with superlative Gold pivots or Springs; also Gums, Sockets, and Palate, formed, fitted, finished and fixed, (not drawing Stumps nor causing Pain) so accurately as to answer every purpose of the natural; whereby Deficiencies are supplied and imperfections covered with useful Ornaments, most helpful to Enunciation, Mastication, &c.

"The Nobility and Gentry, sending a Guinea, with written notice, shall have punctual attendance, if the fee is taken, by Martin Van Butchell, Upper Mount Street, Grosvenor Square, who (keeping strict Honour and profound Secrecy) neither goes journeys nor gives credit, but aims and is acknowledged to excel in performing the various Operations, after methods and with instruments, peculiarly his own, invented or improved, through a series of close Application, expensive study, and much experience.

"At home each day, from Nine till Three, Sundays excepted: Advice is freely given, and Specimens astonishing are shewn.

"☞ M. Van Butchell having made all his employers happy (tho' many had been hurt by Dentists esteemed famous) hopes discerning, generous minds, when others cannot please, will apply to him: who cautiously Cures the Tooth-Ach, files, fills, fastens, scales, cleans, extracts and replaces; also with care prepares every Thing expedient, innocent, yet efficacious, to cleanse, recover, and preserve the Gums and Teeth.

"☞ VAN BUTCHELL over the Door."

[March 23, 1769. A Noble Earl graciously wrote, dated, and subscribed four weighty Lines; to declare the ability and uprightness of M. Van Butchell; which those who doubt may see.]

"DAILY ADVERTISER, 1766.

"JAMES SPENCE, Operator for the Teeth to his Majesty, in Red-lion-street, Holborn, thinks it a duty incumbent on him to acquaint the Public, That by long Experience and Assiduity, he has discovered a Method, whereby he (with the assistance of his curious new invented Instrument) safely extracts all superfluous and decayed Teeth, and replaces them with perfect human ones, so that the Gum will adhere to them, and in a short time become equally permanent, useful, and ornamental, with the originals.

"The superior Excellency of this Method to that of fixing artificial Teeth with Wires or Springs will evidently appear, it being done in the natural way without the least trouble or inconvenience, as can be attested by many of the Nobility and Gentry, who have experienced its beneficial Effects.

[There certainly could not be *any* "inconvenience" in having one tooth drawn, and another driven in with a wooden Mallet!]

NEW DISCOVERY.—At a meeting of the *Linnæan Society*, amongst the specimens exhibited from Natal, was a species of berry (*Atumoer*), the outer covering of which contains a powerful tannin, and is used in the manufacture of ink, while the kernel yields oil; a plant, which, among the natives, is held to be a specific against the effects of sun-stroke; and another called the Tooth-ach-plant (*Tambesi*), said to be known on the frontiers of Cape Colony. The sender of this last, remarks—"I am assured by those who have used it, that a piece of the root rubbed upon the gums will loosen any tooth, so that the vilest may be removed." A small parcel of insect wax was also exhibited, the properties of which appear to be remarkably enduring. The Caffres use it when fashioning their hair into a coronet, and the form is retained for a long time without renewal of the wax. Science will soon determine whether in these things we may not have the small beginnings of valuable imports.

Teeth in Consumption.—It is a common remark, that pearly-white teeth are characteristic of predisposition to phthisis. It may not be uninteresting to mention one fact which I have observed, namely, that phthisical subjects very frequently have the teeth presenting a black appearance; this blackness first shows itself on the lateral parts of the two middle incisors of the upper jaw; the teeth of the lower jaw are but rarely attacked. As a general rule, persons presenting this appearance of the teeth will be found, if their early history be inquired into, to have evinced, at some previous period, all the constitutional symptoms of consumption; and it is well worth remarking, that a person who has run through such an ordeal will usually be found to be proof against the contagion of phthisis.—*Dr. Ramage on Consumption.*

Medical Practice in Beloochistan.—To the practice of medicine in Beloochistan there are only two slight drawbacks. When the physician gives a dose, he is expected to partake of a similar one himself, as a guarantee of his good faith. Should the patient die under his hands, the relatives (though by no means bound to exercise it in all circumstances), have the right of putting him to death, unless a special agreement has been made freeing him from all responsibility as to the consequences; while he, should they decide on immolating him, has no reasonable ground for complaint, but is expected to submit to his fate like a man and a hakim. In other respects the amateur will find an easy field.—*Blackwood's Magazine.*

Dental Dispensaries.—The London Dental Dispensary, a notice of which in the Lancet gave rise to the correspondence we commented upon at page 456 of our last impression, is, we hear, removed to a more convenient situation—476, New Oxford Street. It was founded in 1855, by Mr. Charles J. Fox, who is now assisted by Mr. J. L. Statham, in attending to the necessities of the poor patients. Mr. Tomes is Consulting Dentist to the institution.

At Birmingham, a Dental Dispensary has been established, under the presidency of the Mayor, and the supervision of an influential committee. Mr. Samuel A. Parker is appointed Dentist, and Mr. English, Consulting Dentist.

At Islington, a Dental Dispensary has also been established, by some gentlemen of the neighbourhood, a responsible Board of Management having been formed, and Mr. Owen appointed Dentist.

We have elsewhere commented upon the subject of Dental Dispensaries. No doubt, such institutions may be serviceable in certain

localities, under responsible management; but their indiscriminate multiplication is to be discouraged, for the reasons we have adduced.

DENTISTS' ASSISTANTS' PROVIDENT ASSOCIATION.—Under this title, an institution has been established for the purpose of affording relief in cases of sickness to its members. We have received the Rules and Regulations of the Association, from which it appears, "that any member becoming unable to follow his employment through sickness or infirmity, shall be entitled, on complying with these Rules, for a period not exceeding thirteen weeks, to the sum of 15s. per week; and for a further period of thirteen weeks, to the sum of 7s. 6d. per week." We do not know who are the promoters of this movement, but whoever they are, they deserve the gratitude of the dentists' assistants, all of whom we trust will see the importance of aiding in so good a cause.

The assistance proposed to be rendered to the sick is somewhat inadequate; but the promoters of the undertaking have acted most judiciously in not fixing upon an allowance which they may not be able to continue. Far better to increase the benefits when there is a reasonable probability that such increase can be sustained; and we sincerely hope that the time is not far distant, when the Association will be enabled to enlarge its sphere of usefulness.

The Offices of the Institution are at 32, Sackville Street.

REVIEWS.

Human Osteology: comprising a description of the bones: with delineations of the attachments of the muscles; the general and microscopic structure of bone and its development. By LUTHER HOLDEN, F.R.C.S., Demonstrator of Anatomy and of Operative Surgery at St. Bartholomew's Hospital. Second Edition. London: John Churchill.

A period has now happily arrived, when it is manifest that the education of the dentist must, ere long, become thoroughly liberal. All the efforts made of late are in the direction of extended education, and every well-wisher to the profession must hail with delight the occasional useful additions to that department of literature, an acquaintance with which is of such moment to the dental student.

It may not be essential that the dentist should be master of the subject of which this notice treats (although, we presume, there are few who would not expect him to be pretty well up in it), but to the practitioner, who aims at taking and maintaining a standing amongst the first of his professional brethren, we hold, that a good knowledge of Osteology is imperatively called for; and as there is no relaxation more pleasing to the intelligent mind than mixing and conversing with men of cultivated intellect, we would strongly advise those of our dental students who feel an honourable desire to adorn the profession of their adoption, and to enjoy the friendship of its most distinguished Members, to commence an early study of Osteology. It is a study which will afford the very best ground for future investigation in general and special anatomy and physiology. This being our opinion, we cannot but congratulate the profession on the appearance of the second edition of Mr. Holden's Human Osteology. The first edition of this work was a valuable contribution to the stock of professional knowledge, but the book under notice contains much additional matter of practical utility, for which it appears, from the author's preface, he is indebted, in some degree, to Professor Queckett, and Professor Owen.

The general contents are arranged under the following heads, viz. :—Observations on the structure of bone—Microscopic structure of bone—Development of bone—Vertebral column—Individual bones of the skull—Skull as a whole—Bones of the upper extremity—Bones of the lower extremity—Bones of the thorax—Muscles of the back—Os Hyoides—General survey of the skeleton—Larynx—Internal ear—On the unity of type in the vertebrate skeleton. The whole subject is treated in so clear and forcible a style, as to render the interesting study of Osteology easy to students of ordinary diligence; whilst, as a book of reference to the practitioner, Mr. Holden's work is invaluable. The illustrations are well executed and judiciously arranged.

Toothach, and other Affections of the Teeth, relieved by the Electric Cautery. By THOMAS H. HARDING. London: Walton & Maberly, 1857.

Many of our readers will remember, that some months ago an able paper on the Electric Cautery was read at the College of Dentists by Mr. Harding, and published in this Journal in due course. The little work before us consists of this paper revised; and the importance of the subject, coupled with the lucid manner in which it is handled, renders the essay worthy of being strongly recommended to the profession in the convenient separate form in which it is now published.

With regard to the *success* of the Electric Cautery as a remedial agent, Mr. Harding observes—"I can now, with still greater confidence and much larger experience, lay this most valuable and efficient remedy before the notice of my professional brethren than I did in 1851. Very many years' constant trial have only further convinced me, that for ingenuity, simplicity of contrivance and application, nothing that has hitherto been invented can surpass it."

NOTICES TO CORRESPONDENTS.

All communications intended for insertion in this Journal must be authenticated by the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

Contributors are requested to be so obliging as to write legibly, and on one side of the paper only.

Contributions intended for insertion in the next number of the *Quarterly Journal of Dental Science*, should be sent to the publishers, (addressed to the Editor) *not later* than June the 1st, and as much *earlier* as possible.

*** In reply to several inquiries, we beg to state, that the back numbers of this Journal may be obtained of Messrs. Walton & Maberly, Upper Gower Street, or through the Booksellers.

A Subscriber from the first.—We are pleased to learn that you approve our determination to publish a correct list of Dentists appointed to public charities. The response to our appeal for information from provincial institutions, is as yet, so imperfect, that we shall postpone giving any addition to the list contained in our last, until we are in a position to present more complete information upon the subject. We trust that all Dentists, holding public appointments, will communicate with us, in order to facilitate this object.

Studens.—We have been very reluctantly compelled to postpone the publication of Dr. Carpenter's Lectures, in consequence of the pressure upon our space, caused by the reports of the regular monthly meetings of the College of Dentists. It is our intention to publish them entire.

R. H. *and others*.—The articles in the publication alluded to, have surprised us. You had better communicate with the Society it represents.

Mr. Johnson.—No doubt the College is the only publicly organized body of dentists in the Kingdom.

An Old Practitioner.—We thank you for your kind expressions. It has ever been our endeavour to maintain the dignity of our profession, and it ever shall be.

A Member.—You may obtain the information you require of Mr. Matthews (the Treasurer to the College), 17, Lower Berkely Street.

W. R.—Mr. Jacob Bell is an authority in matters connected with the druggists; we doubt very much whether he is the proper person to appeal to on the question of Dental Reform.

Mr. Mason's communication is received, and shall receive early attention.

Letters, Communications, &c., have been received from Mr. W. Perkins, Mr. Parker, Mr. Owen, Mr. Fox, Mr. Sass, Mr. James Bate, Dr. Hawkins, Dr. Gill, Mr. Atkinson, Mr. Belfour, Mr. H. L Jacob, A Subscriber, Mr. Johnson, A Member from the first, W. R., Mr. Mason, Studens, &c.

Notice. The price of the Quarterly Journal of Dental Science is reduced to Three Shillings per Number. Gentlemen wishing to become Subscribers, should write to Messrs. Walton & Maberly, 28, Upper Gower Street, N. W., and it will be punctually forwarded to them.

The Annual Subscription *(Post free)* is 13s. 6d.

The Second Number of the Second Volume will be published on the 1st of July next.

Charles Ritchie & Co., Printers, Fore Street.

Postscript.

SPECIAL GENERAL MEETING OF THE COLLEGE OF DENTISTS.

On Saturday evening, March 27, a Special General Meeting of the College of Dentists was held, for the purpose of taking the sense of the Members upon the course to be pursued, in consequence of the rejection of the proposed terms of Amalgamation.

Mr. Robinson occupied the Chair, and explained, that the position of the Council being considered anomalous, it was determined to consult the Members upon the position of the College. He wished to know what was to be done with the proxy-papers, received at the late meeting, and which were now useless?

Mr. Matthews moved that the proxy-papers be destroyed.

The motion having been duly seconded, was carried, and the proxy-papers were burnt, in the presence of the meeting accordingly.

Several Office-bearers declined being nominated for the New Council, in consequence of the rejection of the Terms of Amalgamation.

In reference to the business of the evening, Mr. Mackenzie moved—"That as the Council has never been dissolved, it is still in active existence, and consequently cannot be in an anomalous position; and that it be requested to call a general meeting as early as possible, to fill up the vacancies in its body, occasioned by the resignation of some of its Members."

Mr. Underwood rose to correct a misapprehension as to some remarks made on a previous occasion, in reference to the re-election of the Delegates at the annual general meeting. It was his decided opinion, that the Delegates were requested to return to office for the purpose of testing the feeling of the Members at large, upon the same terms which had been placed before the Members on the 8th of January.

Mr. Tibbs considered, that the better plan would be to appoint a

Sub-committee of five, whose duty should be to endeavour to collect a Council from amongst the Members, who would act with unanimity, and he moved an amendment accordingly.

The amendment was duly seconded.

A lengthened discussion ensued upon the respective merits of the amendment and original resolution. The former was then put to the vote and carried.

The following gentlemen were elected as the Sub-committee :—Messrs. Purland, Weiss, Bartlett, Imrie, jun., and Harding.

The meeting terminated with a vote of thanks to the Chairman.

We sincerely trust, that the result of this meeting will be to restore the unanimity and good feeling which for so long were characteristics of the College.

LIST OF OFFICE-BEARERS WHO HAVE RESIGNED THEIR SEATS AT THE BOARD OF THE COLLEGE OF DENTISTS OF ENGLAND.

Mr. Robinson	—*President*
Mr. D. Corbett	*Vice Presidents*
Mr. F. B. Imlack	
Mr. N. King	
Dr. Reid	
Mr. Thomson	
Mr. Tibbs	
Mr. Crampten	*Council*
Mr. Hepburn	
Mr. Ghrimes	
Mr. Hunt	
Mr. Jacob	
Mr. Merryweather	
Mr. Murphy	
Mr. Mitchell	
Mr. C. Rogers	
Mr. Thomson (through absence)	
Mr. Underwood	
Mr. Hill	—*Hon. Corresponding Sec.*
Mr. Fox	—*Hon. Curator and Librarian.*

*** *The Journal of Practical Medicine and Surgery* has been received, but too late for further notice in this issue.

THE

QUARTERLY JOURNAL

OF

DENTAL SCIENCE.

Charles Ritchie & Co., Printers, Fore Street, London.

THE

QUARTERLY JOURNAL OF DENTAL SCIENCE.

JULY 1858.

THE PAST, THE PRESENT, AND THE FUTURE.

A REVIEW of the events connected with the process of organizing the dental profession, naturally brings into notice the several sayings and doings of the individuals who have taken part in such process: amongst these may be noted, a gentleman equal in position to any practitioner of the day, namely, Mr. Clendon. We need hardly say that Mr. Clendon's opinions and our own, in regard to educational requirements, are diametrically opposed. We hold, as we have always held, that the dental profession should be organized independently of any other body, whilst Mr. Clendon would make a surgeon of the dentist. He would have no middle course (and here he is right), a surgeon—a full surgeon, and nothing but a surgeon. We understand what he means, whilst we are assuredly convinced that his views are equally illiberal and impracticable.

Mr. Clendon has condemned both the policy of the promoters of the College of Dentists, and that of the party known as the Odontological Society, because the object of the first is to promulgate an independent course of procedure, and the latter would induce the College of Surgeons to grant dental diplomas to dentists, of inferior degree to those of full surgeons. Nevertheless, Mr. Clendon has taken part in the dental reformatory movement, and we believe that the part

he has taken will tend materially to aid the cause of common sense and justice, albeit he has condemned that cause.

A pamphlet of Mr. Clendon's is before us. From its contents we learn that the College of Dentists was established on thoroughly constitutional principles. The whole of the proceedings which led to its formation were public. The rich and the poor of the profession together had a voice in the construction of its laws. From the same pamphlet, we learn that the Odontological Society was started in a spirit of the most arrogant assumption, coupled with secrecy. Eighteen individuals had the audacity to petition the College of Surgeons to do such and such things for the Dental Profession. These same eighteen constituting themselves THE Profession. Others calling themselves Dentists, were not worthy to be consulted! Finding that no notice was taken of them, and that a College of Dentists was about to be legitimately founded, these alarmed eighteen gentlemen resolved themselves into a private meeting at Mr. Cartwright's house, on the eve of the day on which the College was to be christened. They sat late into the night, framed by-laws, elected themselves into a Council of an "Odontological Society," and had their names printed in the morning papers as such, the day following.

This is the purport of Mr. Clendon's description of the origin of the College of Dentists, and of the Odontological Society. In the main, the description is a correct one, and we prefer to glance at his uncontradicted version of the matter so far, than to give one of our own. We must, however, now go on with proceedings subsequent to those above referred to. We have very good reason to believe that the prime mover of the Odontological opposition, flattered himself that the publication of the names of the self-elected Council, would at once enlist all the sympathies of the profession in their behalf, and that the College of Den-

tists and *right*, would be swallowed up by the Odontological Society and *might;* but he was most egregiously mistaken. With all the blandishments of F.R.S.'s, F.R.C.S.'s, M.R.C.S.'s, &c. &c. the profession was not to be blinded, and little more than sixty Dentists out of fifteen hundred could be found to lend themselves to the ungenerous machinations of the clique, whilst three hundred joined the legitimate movement by becoming Members of the College of Dentists. It is not to be denied that the College has been seriously interrupted in its operations by the Society, for many well wishers to reform, have been unwilling to join the former, from imperfect information as to its objects. They have understood that two *publicly* organized bodies were acting in opposition to each other; but the time has arrived to tell the plain truth. The College of Dentists *is* a publicly organized body. The Odontological Society—an offshoot of the eighteen disappointed memorialists—brought before the public with the express intention of stifling the College. This fact has recently been made manifest.

Our readers will well remember all circumstances connected with the late amalgamation business. On both sides there was a desire to see unity of action. We say on both sides, because, in speaking of the Odontological Society, we are speaking of a private club, in which freedom of action is denied. *Power* rests with the executive, and we have seen how, and by whom, the executive was elected. Therewere, and there are *Members* anxious for amalgamation, whilst on the part of the College the desire was and is *unanimous.*

But the College being a representative institution, *placed* authority in the hands of an executive, and they could do nothing affecting the constitution of the College without the sanction of the Members.

A meeting was therefore called, and the terms of amalgamation submitted. They were discussed; and as it was

found that, *if one of the clauses were in any wise altered or amended,* the Odontological Executive, or rather the two or three persons who lead the Executive, would not sanction an amalgamation at all, they were rejected as they deserved to be. It is well that they were not rejected without full and free discussion, for although freedom of speech may be considered undignified in a scientific body, it is inseparable from one constitutionally established, and its drawbacks are altogether outweighed by the resulting public benefits. Witness, for instance, the Royal Medical Benevolent College, the Council of which would have all their own way in its management. In proceedings recently made public they may have been right, or they may have been wrong, but the Governors had the reins in their own hands, as it happened—the Governors supported them, at meetings of a nature the reverse of dignified. Mr. Cattlin came out at these meetings strongly in opposition, and spoke his mind in a style that would have quite shocked another society with which we believe he is connected. Under all circumstances it cannot be denied that the present position of the College of Dentists owes everything to the justness of the cause espoused by its Members. The powerful opposition brought to bear against it has proved abortive. The late serious differences of opinion, whilst they have deprived it of many highly-esteemed men from the Council, have not deterred others from taking their places, and above all, a very large number of those who favoured the terms of amalgamation have since acknowledged the illiberality which characterized the manner in which they were brought forward, and some of these are now *Members of the Council,* whilst numerous applications for membership have been renewed from outsiders since it has been made known that the Council do not intend to apply to the Members for sanction to make it compulsory for candidates to undergo an examination.

Altogether the prospects of the College are undoubtedly

cheering, with a President of high position, fully capable of performing the important duties of the office—a Council of gentlemen, several of whom have earned wide reputation, the remainder being younger though rising men in the profession, we have good grounds for looking forward with hope to the future. Indeed we have reason to believe, that before the publication of our next impression, a systematic and reasonable course of action will have been matured by the Council for the approbation of the Members.

There is but one course now left open to the College, and that is to act fearlessly. There must be no more warming of the snake at the fire—it has already bitten although the venom has not proved fatal. The real spirit of the opposition became apparent, when one of the most highly esteemed officers of the College was insulted because he undertook the thankless task of endeavouring to conciliate them at the last moment. But Mr. Matthews will, we trust, live to see the day when his praiseworthy exertions will be acknowledged by friend and by foe.

SURGICAL INSTRUMENTS

Of the Societies with which this metropolis abounds, there are few which one hears more about than the Society of Arts, Manufactures, and Commerce. The Great Exhibition of 1851, if it did not owe its origin, was certainly much indebted for its organization to the Society of Arts. That Exhibition brought into existence many new fields of enterprise—artistic, commercial, and educational; nor did the Society neglect to lend its aid in developing the resources of each and all of them. We willingly pay our tribute of praise to the executive, for the good accomplished through

the agency of the Society of Arts, but we should be guilty of neglect of duty if we did not, just now, remind those in authority, that, like all other institutions, the Society has made many mistakes, not the least of which has been the encouragement given to the production of *cheap* scientific instruments, without due regard to excellence. For instance—some time ago, a prize was awarded for a Microscope, which the successful competitor was bound to supply at a ridiculously low price. What was the result?—the advancement of science? Surely not. A *toy* was produced which required a sufficient amount of work in its construction to make it non-remunerative to the manufacturer, but as for practical utility to the purchaser, it was utterly worthless.

The identification of the Society of Arts, with proceedings of which the case just quoted is but an instance, must, if persevered in, ultimately lower its position in public estimation. It is, therefore, with regret mingled with surprise that we learn the Council has actually, so far, departed from its legitimate sphere of action, as to appoint a Committee to investigate the subject of mechanical contrivances applied to medicine and surgery!

From what has subsequently transpired, it would appear that one of the objects of the Committee is to endeavour to procure a reduction in the price of surgical instruments.

By whom the Council was induced to take the false step of nominating a Committee such as the one above alluded to, we know not. This we do know, that the medical profession can only look upon the matter as an *insult;* unless, indeed, charity should suggest that a Council of laymen have scarcely sufficient opportunity of becoming acquainted with the honourable professional spirit, pervading the majority of the class whose life is spent in alleviating human suffering.

For the information of the Council of the Society of Arts, we beg to state, that the investigation of the contri-

vances applied to medicine and surgery is now, as it always has been, and ever will be, in the hands of the profession itself—that the anxious attention of the most experienced and skilful men in its ranks is unceasingly directed to correct imperfections, when they exist, in the appliances at their command—and, that when such improvements are effected, they are at once made public for the general good. No "reward" for a successful invention by a professional man of any pretensions to position, is required, beyond the satisfaction experienced in knowing that suffering humanity will be benefited through his exertions.

With regard to the Society of Arts' Sub-committee on instruments used in dental surgery, all we have to say is, that we know little of the dental profession if its members are not always anxious to make their brethren in practice acquainted with any improvements in their speciality, without stimulus to exertion from any lay society. The dental instruments, however, now in use, are so thoroughly efficacious, that we very much doubt whether the Society of Arts will improve upon them; and as to the *price* of the instruments, when their quality is taken into consideration, we should be ashamed of attempting to deprive the manufacturer of one farthing of his profit upon them.

The first Meeting of the General Committee was held on May 25th, and may be looked upon as one of the most important; yet, less than thirty members attended it out of nearly seventy. This does not look as if the gentlemen whose names appear on the list are very warm in the cause; nevertheless, it is to be regretted that any professional men should have been so indiscreet as to allow their names to be mixed up in a movement which can only be looked upon as retrograde and undignified.

MEDICAL REFORM.

MEDICAL REFORMERS have for many years been zealously engaged in the much-needed work of relieving the profession from the anomalous position it has so long occupied. With this object in view certain bills have, from time to time, been brought before the legislature; but the unfortunate disunion existing amongst the licensing bodies has been of a nature to render successful legislation impossible up to the present moment. Now, however, the horizon would appear to be brightening, if we may judge from the proceedings in Parliament in reference to this question.

Of the three Medical Bills introduced into the House of Commons, during the present session, Lord Elcho's has been withdrawn, and Mr. Duncombe's postponed: but Mr. Cowper's has received the support of Government; the Secretary of State for the Home Department having expressed himself in favour of the main features of this Bill, although he wisely stated his conviction, that the commendable provisions of the others might well be incorporated with it, together with such other provisions as were judged necessary. This spirit of liberality on the part of the Government deserves to be attended with the best results to those whom it most concerns, and augurs well for the recognition of that now-important body—the Dentists of this country.

In all the medical bills brought before Parliament, not one allusion has been made to Dentists. As a class, they have been wholly ignored, although many honourable Members of the legislature, gifted with eloquence, and the power of making it effective, would have had the mortification of merely *mumbling* their sentiments to impatient listeners,

were it not for the aid rendered them by the Dentist. Chemists and druggists have been fully recognised in Medical Bills, and they are distinctly exempted from the operations of Mr. Cowper's. Now it is but a small instalment of what is justly due to Dentists, that they should at least be acknowledged as a body, and that they should have exemption from the operations of any legislative measures intended to regulate the Medical Profession. If Mr. Cowper's Bill pass into law *as it stands at present*, Dentists will not only remain unrecognised, but they will be unable to recover fees for the surgical operations of their speciality.

It is then, with much gratification, that we learn, the Council of College of Dentists have been active in this most important matter. They have been in communication with the Government, and the courteous manner in which their advocacy of the cause of the Dental Profession has been received, encourages the hope that the time is not far distant when the Dentists of England will indeed become a recognised body. We have good reason to believe, that should there appear strong probability of a Medical Bill passing this Session, many Members of the House of Commons will be prepared to support the claims of our Profession.

The College of Dentists must nevertheless continue vigilant; their position as a publicly constituted body is one of the greatest responsibility, and at this moment the utmost caution is required in their proceedings, for it is to them that the Profession looks for the vindication of its rights.

DENTAL SURGERY AND MECHANICS.

A LECTURE ON THE PRINCIPLES AND PRACTICE OF DENTAL SURGERY.

By Alfred Carpenter, M.B., M.R.C.S., &c.

[On May the 7th and 14th 1857, Dr. A. Carpenter gave Lectures at the College of Dentists, on the Principles and Practice of Dental Surgery. We have been compelled, through the pressure on our space, to postpone the publication of these lectures from time to time, and we fear, that we shall be unable to present our readers with the first lecture, which has been unfortunately mislaid by the author, but we have now the pleasure to publish a full report of the second.—*Ed.*]

You will recollect, Gentlemen, that my first lecture was occupied in detailing the general conditions which give rise to the diseases that affect the different parts of the mouth, or which arise during their course. I described to you, as far as time would admit, the various kinds of inflammation and the various results or events of that action. I mentioned, somewhat cursorily it is true, the various changes that take place in resolution, effusion, adhesion, suppuration, ulceration and mortification. I dwelt somewhat upon hæmorrhage, and some of those constitutional causes which occasionally produce mischief in the mouth, and when time compelled me to close my lecture, I had glanced over the action of dentition in the child, and pointed out to you the reasons for and against scarifying the gums. We will, if you please, gentlemen, take up the thread of our discourse at this point; and I will now point out to you some of the diseases proper to the structures of the mouth, and which you will frequently meet with, and be called upon to treat in the course of your practice as Dental Surgeons. They have names, variously, and, at times, most improperly constructed to express their meaning. I will not now enter into a crusade against names, but one cannot help wishing, that names used in surgical as well as other branches of science, were framed with the express purpose of meaning something, and not, as is too frequently the case, either meaning nothing, or misleading altogether.

We have considered inflammation generally, let us now look at

it locally. It may affect any part of the mouth and throat—the salivary glands, the tonsils, the pharynx, the palate, the uvula, the gums, and the teeth. Thus, the sub-maxillary glands often become inflamed from cold, or from the irritation produced by the presence of diseased or decayed fangs of teeth in the lower jaw. Recollecting the symptoms of inflammation, and bearing in mind the situation of the sub-maxillary glands, you will easily make out the nature of the case, accompanied, as it always is, by some difficulty in swallowing. Unless you speedily lessen the inflammation, especially if it is the result of diseased teeth, the gland suppurates, discharging very fœtid pus, either into the mouth, or externally beneath the jaw. Whenever, therefore, you meet with these swellings below the jaw, accompanied with pain, with heat, and some difficulty of swallowing, do not hesitate to remove every fang of a decayed tooth that may by any possibility be the cause of this inflammation; by this means you may arrest the suppurative process, and save your patient the presence of those unsightly scars which always follow upon processes of this nature. I have at this time under my care, a young lady fourteen years of age, and of considerable personal attractions, irretrievably marked in this manner, which might have been entirely prevented had she consented to the extraction of a decayed tooth at an early period of the disease. The inflammation is sometimes still more extended, and not only injures the superficial structures, but the deeper tissues also; a scale of the alveolar process dies, sloughs, in fact, and has to be exfoliated by a long and tedious process. Little sinuses remain for a long time beneath the jaw, and will not heal by any surgical appliances until the dead portion of bone has been removed. This may not occur for many months, during which, a thin sanious discharge takes place, irritating the surrounding skin as well as the patient's temper, and sadly trying that of her medical attendant. At length the probe detects a loose piece of bone; it is seized by the forceps, and quietly extracted; and now the sinus heals in a very short space of time. Now, you will ask, can we not do something to hasten this process? The answer will be—No! If you have removed all dead fangs from that portion of the mouth, and if there is no depôt of matter to be felt beneath the gums, you had better let further proceedings alone. You might inject solutions into your sinus to try and hasten the separation, but you are just as likely to increase the size of the part to be separated: therefore, your best plan will be to wait quietly until nature has kindly separated it for you;

then your aid will be necessary and useful in removing the little sequestrum of bone with a pair of dressing or bone forceps. Your patient should simply keep a little water dressing upon the wound, and cover it up with oil-silk, whilst every means should be used to improve the general health.

Inflammation of the parotid gland, or the mumps, strongly alters the appearance of the mouth, and, in the early stage, might be mistaken for toothache. I will, however, not stay to consider it, but pass on to inflammation of the inside of the mouth. This, sometimes, puts on an appearance called aphthæ, from the Greek Ἅπτειν, to burn. The tongue, the roof of the mouth, and the gums, exhibit several little white or greyish spots, which look like ulcers, and are frequently described as such. In the majority of instances, however, this is not the case, they are really little blisters upon the surface of the skin—exudations from an inflamed membrane; and when these exudations are brushed away, the exposed cutis, or more properly speaking, the basement membrane is very red and tender, causing more or less pain when food is taken. These blisters are exceedingly annoying when a few only exist, and a very serious malady if numerous, when a disease is produced called thrush, common in early infancy, as well as during first dentition, and also frequently met with in the later stages of some exhausting diseases, as consumption, &c. Small ulcers will, however, exist in the mucus membrane of the mouth—the mucus exudation falls off, and the basement membrane actually ulcerates, sores form, varying in size from half a pea to a surface the size of a sixpence, sometimes deep, with thickened edges, and presenting an ashy white colour, and when on the side of the tongue, or near the throat, causing some inconvenience and difficulty in swallowing. These ulcers are frequently produced by the sharp edge of a broken tooth; a portion of a carious tooth breaks off and leaves a sharp edge, which first blisters the tongue, and the irritation being continued, an ulcer follows. They may also be caused by the edge of a plate which does not fit the gum evenly, and which irritates the tongue in the same manner, and I have occasionally had reason to believe, that it has been caused by a person's own fault in going to a pretended dentist, who has made use of base metal instead of gold in the formation of the plate itself; by means of which a galvanic action is kept up in the mouth, to the serious detriment of the patient's mucus membrane, as well as the remaining teeth. These ulcers are best remedied by touching them with a stick of nitrate of

silver two or three times, and removing the exciting cause, if it is in the mouth; if it is not there, but in the constitution itself, by handing your patient over to the physician, for his general health requires attention.

The gums are very liable to inflammation; you have redness, swelling, heat of mouth, soreness, and often very severe pain. The common cause is irritation, arising from dead fangs, or diseased teeth. Now I told you, when speaking of inflammation, that when a part mortifies, nature sets up a process of separation—a line of demarcation is found separating the dead from the living. The ulcerative process gradually eats through all intervening structure, and the dead part falls off if it be not removed by surgical aid. The same law affects the action set up by foreign bodies; if a spiculum of wood be run into the finger, inflammation arises, and after some time, the offending, or intruding body is expelled. It is a fundamental law of the animal frame, that dead parts shall irritate living parts, and produce such conditions as naturally lead to the expulsion of the offending agent. But the teeth are so firmly set in their sockets, and are so dense in their structure, that they do not easily ulcerate or absorb; they remain, therefore, for a long time after their complete or partial death, a plague to the soft parts with which they are connected; they keep up a state of chronic inflammation, the gums around become exceedingly sensitive, and are easily excited into acute inflammation by the action of irritants. If the unfortunate possessor be exposed to the action of cold, or the gums be irritated by increased acidity of the secretions of the mouth, or by any exciting cause of inflammation, this acute inflammation is remarkably prone to end in abscess, gum-boils, as the little ones are called; sometimes the quantity of matter formed is very large, and of an exceedingly offensive character.

The chronic form of inflammation is frequently attended by ulceration of the gum around the decayed tooth, the soft parts separating therefrom, in the vain attempt to expel the offending body. This process goes on sometimes for a very long period; fungous granulations spring up, unhealthy, spongy, loose, and incapable of cicatrizing; they easily bleed and make the mouth exceedingly disagreeable, and whilst the dead tooth remains in situ, no satisfactory cure of this state of things can possibly take place. How vain then must be the promise of the dentist, who tells his patient, that he will fit him a set of teeth without extracting the stumps; and if the dentist knows the impossibility of such being of service for long, how unwise and in-

jurious to the best interests of the Dental profession. You may depend upon it, that whilst there are dead teeth, or ulcerating fangs remaining in the jaws, you will never be able to fix a plate in the mouth that your patient can wear with comfort; if you do enable him to wear it, he will not wish to use it for any length of time.

When the inflammation exists in the gum itself, the matter is generally formed within the substance of the gum, and can be easily evacuated; but it is frequently far more serious in its nature, the matter forming between the substance of the gum and the alveolar process, or it may even be, within the socket of the tooth. If the suppurative process is established here, the pain is very severe, and may continue without intermission for many days; eventually the matter is discharged, and there is at once a great alleviation of the suffering. It may discharge near the seat of inflammation, or it may burrow along the bone beneath the periosteum, for some distance, and then discharge itself, forming a fistulous opening, through which putrid fluids are continually finding their way into the mouth, to the great inconvenience and disgust of the patient.

This discharge of matter may take place into the antrum, and then the case becomes still more serious; for the whole of the mucus lining of that cavity may take on the inflammatory process. It occasionally happens, that this effect of previous disease, is the condition attended to most, whilst the original cause of the mischief, viz.—a portion of a diseased tooth is left alone, only to do greater mischief at some future period. When the membrane of the antrum inflames from this cause, it pours forth a vitiated secretion, which is not exactly pus, but a kind of mucus altered in quality and increased in quantity by inflammatory action. This condition of the antrum can of course only arise when the inflammation of the gums has had its origin in diseased fangs of the upper teeth, and if you recollect the anatomy of this part of the mouth, you will easily see how such an event may arise; for the teeth of the upper jaw frequently send their roots very nearly through the floor of the antrum, and at times they are merely covered by the lining membrane of that cavity.

The pain attending upon inflammation of the antrum, will depend very much upon the pressure exerted by the effused fluid, and the structure of the antrum is such, that it must be filled before the pressure becomes great: the pain then is continuous and urgent, the walls of the cavity become distended, the cheek may project, and at length matter breaks forth through the nose or mouth, and relief is

obtained by nature, if art does not come first to aid, by evacuating it through the alveolar processes of those teeth which first set up the mischief.

The best evidence of suppuration within the antrum, in addition to the uneasiness and tenderness of the cheek, will be the flow of matter through the apertures left, when decayed teeth have been removed, or by its discharge into the nose.

The treatment of suppuration within the antrum, consists in the formation and maintenance of an opening in a depending situation, and occasionally syringing it out with warm water. If there is no tooth requiring removal, the antrum may be perforated through its anterior parieties. Divide the mucus membrane and periosteum above the first molar tooth, and perforate the now thinned bony wall; be careful to make sufficient allowance for the depth of the alveolar process, and direct the perforator obliquely upwards and inwards; make your opening large, and prevent its closing, by occasionally inserting a slip of lint, or a small wax tent. You will now have a fistulous aperture which will give you some trouble to close, unless you have removed the cause of the suppuration in the first instance; this will generally be the stumps of decayed teeth, and all the fangs must be removed as soon as they are discovered.

Sir B. Brodie says, in a Clinical Lecture, reported in the Medical Gazette:—"The cause in which the disease (*i. e.* suppuration of the "antrum) originates, is generally a diseased tooth, which by-the-by "gives rise to toothache. The inflammation on which the toothache "depends then terminates, as it always does, in the death of the pulp "of the tooth: then the whole tooth dies, and is now like a portion "of dead bone, or any foreign substance stuck in the jaw."

The teeth are liable to a peculiar calcareous deposit around their crowns, called tartar, or salivary calculus; it adheres very firmly to them, and insinuates itself under the edges of the gums, exciting irritation, and at length inflammation and ulceration. It is deposited from the saliva, and is generally found in larger quantities near to the ducts of the salivary glands, especially those of the lower jaw. The formation of tartar, its chemical characters, and the reasons for its presence in some parties, and not in others, are at present doubtful points; one author represents it as a secretion from the saliva itself, whilst another states, with some degree of reason, that it is composed of the calcareous shells of innumerable animalculæ, or vibriones, which infest the mouth, leaving their debris to crystalize (so to speak)

around the teeth. Berzelius has analyzed it, and states, that it consists of—

Phosphate of lime and magnesia	79 . 000
Salivary mucus	13 . 5
Animal matter.....	7 . 5
	100 . 0

The mucus is derived from the saliva, and is evidently the bond of union for the calcareous particles.

We now come to consider the treatment of inflammation of the gums. If tartar be present, it must be removed as fast as deposited. If the teeth are well brushed every day, it will not form, but when this process has been neglected, it adheres so firmly to them, that a steel instrument is necessary for this purpose, and you are called upon to scale the teeth.

If the inflammation has arisen from decayed teeth, these must be removed; for so long as a dead fang is left in the jaw, there can be no hope of removing the inflammation.

Sometimes the inflammation is caused by the presence of teeth which are not sound, while, at the same time, they are not sufficiently decayed to justify removal; there may be some little irritating cause near the teeth, keeping up inflammation in the gum, and assisted by the carious tooth, leading to continual danger of suppuration. This should be remedied by lessening the inflammation by local bleeding; a leech skilfully applied to the actually inflamed part, will frequently be of great service—scarifications are sometimes used with success, but the success is more doubtful than leeching; cold water is very useful, carefully and continually applied; it is only, however, completely serviceable in slight inflammations, leeching being by far the most effectual remedy, for the flow of blood will continue for some time from a leech-bite, whilst a scarification ceases to bleed in a few minutes, so that there is no time for the inflammation to become subdued. It is a remedy, however, which must be used in the early stage of the disease, as after suppuration has taken place, it will be of no service; your object should then be to hasten the evacuation of the pus by emollients and fomentations generally; at the same time the general health must be attended to. When you are quite certain of the presence of pus, and if the abscess can be easily reached, a lancet should be passed into it, and afterwards a plentiful supply

of warm water used. When the gums are what is called very spongy, scarifications are of most use, and considerable benefit is obtained by using a wash, consisting of gallic acid and tincture of myrrh, once or twice a-day. At all other times, applications are worse than useless, the majority are decidedly injurious, and your patient had much better use cold water than any of the many stimulating and acid substances, which are so frequently recommended as washes for the mouth when the gums are inflamed.

A very frequent source of inflammation in the young adult is the irritation set up during the dentition of the wisdom teeth; I shall have a few words to say hereafter, regarding these organs; and I will now only remark, that free scarifications will relieve, assisted by a good dose of physic; for just as in young children, dentition is rendered more easy by a free condition of the alimentary canal; so likewise in adults, the wisdom teeth are always cut with difficulty when the digestive organs are at fault.

I mentioned to you, when I spoke of inflamation, that it might be common, or specific; the common being that inflammation which is excited at any time by any thing, but the specific can only be excited by one agent; thus we may have the rheumatic, the mercurial, and the syphilitic, each of which can only be excited by rheumatism, by mercury, or by syphilis. Now the rheumatic inflammation differs considerably from the others, inasmuch as it is not prone to suppurate; you need not fear the supervention of this event, and your treatment, therefore, will not be directed so much to the local pain, as the general state of the system; your patient wants medical treatment; cold or warm water will be all the local appliancies necessary; but it is most likely that a blue-pill and a black draught, followed perhaps by a few doses of quinine, or a glass or two of wine, according to the strength of your patient, will be much more likely to remove the pain than leeching or scarifying the gums.

Mercurial inflammation is another condition, very likely to be frequently brought to your notice, although salivation is not carried to the great extent that used to be the case in days gone by. Now I should tell you, that when mercury has been given for a period of time, varying according to the constitution and temperament of your patient, the gums become spongy and congested; there is an increased flow of the salivary and mucus secretions into the mouth; their colour changes to that of a pale rose, with a border of bright red next the teeth themselves. The soreness and swelling increase, the red

line near the teeth ulcerates, the discharges become excessive, and a constant coppery taste is present in the mouth ; the inflammation increases, the gums blister all over, are excessively sore, irritative fever sets in, the tongue swells, is pushed against the teeth, the saliva flows in quantity, the inflammation increases, and it may be that gangrene results ; whilst the patient grows weaker and weaker, the red blood departs from the body, excessive pallor results, and possibly death closes the scene. Such is the progress of events which *may* follow upon a long-continued, or an injudicious course of mercury. The symptoms, however, may cease at any point in the course or train I have mentioned. The most rational plan of treatment is to abate the inflammation by leeches beneath the jaws, used several times in succession, and in the interim applying a large linseed-meal poultice, and using a wash for the mouth, consisting of a weak solution of brandy and water, changing it occasionally for a lotion containing a dram of solution of chloride of soda in an ounce of water ; this latter has a most beneficial effect in cleansing the intolerable fœtor of the breath, and allows the patient to take food with some degree of comfort. This kind of wash will always be the best that can be used, in all cases when the discharges are of an offensive character, and will, by correcting the frequently-disgusting odour of these cases, be a great boon to both surgeon and patient. When there is only a slight amount of salivation, the leeches will of course not be required ; I should only recommend their application when the inflammation is of a character to threaten gangrene.

There is another medicine which easily affects the salivary glands and gums—It is iodine and its different salts, especially the iodide of potassium, a medicine of great power and varied use. Whilst a patient is under its influence there is a great increase in the nasal mucus, he is frequently clearing his throat, the gums become spongy and tender, of a darker colour than from mercurial salivation, whilst the increase of secretion is more that of mucus, than of the salivary fluids. If there are any decayed or decaying teeth in the mouth, the exhibition of the iodine may be the means of increasing that decay, and exciting actual inflammation around the tooth, leading it may be to suppuration ; when such is the case, you should advise the suspension of the remedy, unless the disease for which it is given is of more consequence than the maxillary ailment ; the increased excitement of the gums and dental nerves will usually subside after a few days' rest from the action of the iodine, whilst all your attention will not avail

if the use of the medicine be persevered in. Now neither mercury nor iodine will do positive injury to the teeth, if these are otherwise healthy, and the secretions of the buccal and other salivary glands are healthy in their character. If, however, these latter are unhealthy, that is, if they are changed, and have an acid reaction, instead of an alkaline, which they ought to have; then the influence of both those medicines may act most perniciously.

There is another agent which acts directly upon the gums; one that is occasionally used as a medicine, but much more frequently obtains entrance into the system, when a man is engaged in the fine arts, from being exposed to its fumes, or from it being accidentally present in water—I mean lead and its compounds. I do not know that it has any active action upon the teeth, but I never see the evidence of its presence, unless the teeth are much decayed; and they are always more or less stained brown. The presence of lead in the system is known by a narrow leaden-blue, or slate-blue line, from one-twentieth to one-sixth of an inch in diameter, on the margins of the gums nearest to the incisors of either jaw, the rest of the gums being of a bluish-red tint. This blue discoloration depends upon the presence of sulphuret of lead in the system, and requires general treatment. In no case ought dental operations to be performed upon the mouth, at least operations for the purpose of fixing new teeth, until all evidence of lead discolouration has disappeared, for the gums will be somewhat swollen, and the plate cannot possibly rest comfortably upon a membrane loaded with sulphuret of lead.

I may as well, whilst I am upon the subject of inflammation, tell you a little about the wisdom teeth. Now we are all of us alive to the complications attending the dentition of infants; but the second takes place so gradually, and usually with so much ease, that we are apt to forget that such is not always the case, that complications may and do arise of a most serious character; inflammation of brain, diarrhœa, convulsions, and a series of other maladies, come on and pass away, frequently without any reference being made to the proximate cause of the same. This is especially the case with the wisdom teeth. A young lady has a sweet voice, and is considered a charming musician; after a time she becomes teazed with sore throat; it comes and goes in a most tiresome manner; gradually the throat becomes rough, the tonsils enlarge, and the character of the voice is spoilt; and the more you do to the throat, usually the worse it becomes. Caustic silver is applied, then iodine, and a score of other

applications. These are all useless, if the wisdom teeth are covered with a thick, red, and at times tender gum, for here is the fault: so long as these teeth remain covered, or half-covered with gum, so long will your enlarged tonsils, thickened and roughened pharynx, and husky voice continue. Lance these gums freely, and if need be, cut away a portion from above the crown of the tooth; and after your tooth has come through, you will have no further difficulty with the throat or tonsils.

Another person will have a constant hacking cough—cough, cough, cough, all day long, relieved by nothing; or else it comes and goes in a most uncertain manner. The throat and tonsils are thickened, the teeth are not through, and you will say, there is no room for them to protrude. Should such be the case, you had better extract the second molar, if it is decayed, for then the third will most likely take its place. If it is not, it will soon become so, provided there be really no room for the wise tooth to get out, by reason of the pressure exerted upon it. If you are assured, by the continuance of severe pain in the wisdom tooth (or from some other cause), of its decay, you had better extract it at once, if practicable, and by so doing you will relieve your patient from a large amount of pain and inconvenience.

In some cases the wisdom teeth are cut with convulsions, with severe cephalalgia, with different forms of neuralgia, with long-continued vomiting, with diarrhœa, or several other symptoms of disease, which usually continue, more or less, until the teeth are through the gum, and the latter has receded so that it is free from pressure.

Abscesses near the angles of the jaw occur from this cause, earache, and abscess within or behind the ear, opthalmia in various forms, and sore throat, the latter most likely some time during dentition, in every case.

I have been led to pay considerable attention to the disorders which accompany dentition of the wisdom teeth, from the great frequency with which I have met with sore throat and enlarged tonsils when this process has been going on. As assistant surgeon to the large military seminary of the Honourable East India Company at Addiscombe, I have had great opportunities of observing this process among the gentlemen cadets of that establishment; and I have every reason to believe that a great number of the cases of sore throat, frequent headaches, continual coughs, and several other troublesome disorders, as opthalmia, discharges from ears and nose, have had a

connection with irritation arising from dentition of the wisdom teeth.

Before leaving this part of my subject, I will say a few words regarding cancrum oris, or cankers, as it is commonly called. It commences by ulceration inside the cheek, quickly followed by gangrene, and accompanied by a copious secretion of fœtid saliva; it is caused by inflammation of a low character, and is a consequence rather of debility than active inflammation. It rapidly sloughs through the cheek until it opens upon the outer side. The gums and alveoli are seriously involved, the teeth become loose and carious, and drop out; abscesses form in various parts, and make openings for themselves in different directions; portions of the maxillary bones die, and if the patient recovers, a long and tedious process has to be gone through to allow of the exfoliation of the dead portions of the bones. This disease is, happily, not a frequent one in this country; it is best met by free living, and invigorating remedies—wine and quinine, &c., whilst fresh air will, in importance, be second to none, except highly nutritious food.

The next subject which will engage our attention, is caries and its allied disease—necrosis. You will recollect I told you, in my first lecture, that caries represented, or was analogous to ulceration in soft tissues, and necrosis represented mortification. The same distinction will apply as well to the teeth as to the other bony structures of the body. There will, however, be some little difference in the actual progress of caries in a tooth, as compared with caries of a vertebra or other bone, having a cancellous structure, for, I may tell you, that true caries is much more usually found in soft and cancellated bones, whilst necrosis is more usual in the hard bones: thus, necrosis is common in diseases of the maxillary bone, but caries is rare. I believe, Mr. Tomes is our best authority upon the causes of caries, and I cannot do better than introduce you to his opinions upon the subject as detailed in his valuable work upon the teeth, which I should strongly advise you all to study with diligence and attention, although I differ a little with him in some of his points.

Mr. Tomes defines caries to be "death and subsequent progressive decomposition of a part or the whole of the tooth;" and according to his theory, two circumstances are necessary for complete dental gangrene or decay; viz., "a concurrence of dead dental tissue, and a condition of the oral fluids capable of decomposing the dead part." The vitality of the dentine being the groundwork of Mr. Tomes's theory,

He says that caries is attended with a vital physical change in the dentine itself; the dead is not separated from the living part of the tooth, but it is circumscribed by the consolidation of the living that is next to the dead. The tubes become filled up; they are rendered solid, and the circulation is cut off from the dead mass by the obliteration of the tubes.

Mr. Tomes also states, that if a carious tooth be examined with an eye-glass, the carious portion will be seen to be circumscribed by a translucent line, which is caused by the consolidation of the dentinal tubes, and he views this change as analogous to that which occurs in soft parts when affected with inflammation leading to abscess.

This opinion, to my mind, is opposed to his definition, and will correspond rather to the ulcerative process than complete death of the part; so that merely differing in words, we quite agree in description.

Mr. Tomes also gives as another proof of the vitality of the dentine, "the fact of irritation being transmitted in cases of caries to the pulp, whereby it is induced to renew its formative functions, and recede from the source of annoyance behind a barrier formed at the expense of its own substance."

According to his view, the first process of caries consists in the death of a portion of the tooth; the second, in the decomposition of the dental tissues. "The dentine," he says, "from abnormal action, loses its vitality, and with the loss of vitality the power of resisting chemical action; and the dead part, therefore, under favouring circumstances, is decomposed by the fluids of the mouth. The physical changes which mark the progress of the disease, are first observable under the enamel; which latter, over the affected spot, is either slightly discoloured, or unusually opaque and white: the diseased dentine becomes brown, more or less marked, according to the rapidity with which the decay has advanced; the slower the process the deeper will be the colour of the carious portion, and *vice versa*. The decomposed condition advances gradually from the surface towards the centre, invariably taking the course of the dental tubes; and as the various branches of these converge in their passage inwards to join the main tubes, the diseased mass is necessarily of a conical form. After a while, the surface of the dentine immediately under the enamel becomes softened by the loss of its earthy ingredients, the enamel itself affected, and no longer supported by the subjacent dentine, falls in, and a cavity is formed in the tooth which increases in depth, following the course of the tubes, and likewise

extending laterally. By a continuance of this destructive process, an opening is formed in the pulp cavity, and eventually the whole of the crown of the tooth is destroyed.

"Sometimes, at this stage of the process the disease becomes arrested, there is more vitality in the fangs, they resist the ulcerative process, and are proof against the influence that destroyed the crown. In these cases, the inside of the cavity thus formed, is found of a dark brown colour, bright and hard, like ivory or eburnated bone, and by this means the fangs are retained, their vitality being preserved, and the second variety of diseased bone, viz., necrosis, is not perfected. Should, however, the whole of the pulp be destroyed—should the ulcerated process remove or render useless the dental nerve, then necrosis of the whole tooth results, and eventually the whole must be got rid of, or it will be a thorn in the maxillary jaw, a source of constant suffering and uneasiness to the unfortunate owner."

I would here say a few words upon the custom of destroying the nerve before proceeding to stop the tooth. It is a mistake to suppose the nerve destroyed, for if it were so it would be useless to stop the tooth: a few weeks at most will lead to the death of the tooth, and the owner will be ready to get rid of it, and blame (deservedly) the dental surgeon who had, as he supposed, badly stopped his tooth. I should therefore strongly advise you to study these processes, freely examine into every point connected with the physiology of the teeth and their microscopic structure; consider well the pathology of ulceration and gangrene; bring all the general facts of inflammation to bear upon these processes, and you will then be in a proper and safe condition to study the local effects of disease in the dentine and *crusta petrosa* of the teeth themselves. It is from dental physiologists neglecting the study of general pathology that so much error—so much seeming contradiction has arisen as to the causes and progress of dental caries. Of course, if the nerve is destroyed, or if the first inflammation is sufficiently intense, the whole of the tooth becomes implicated; it is necrosed, and all your efforts will be useless to preserve it in the mouth, and stopping such a tooth would be unpardonable ignorance. You may, by constant cleanliness, by attention to the secretions of the mouth, by occasional applications of mild astringents, you may, I say, stay the progress of caries, and assist in producing the stage of eburnation mentioned by Mr. Tomes; but no aid can restore dead bone. You may heal an ulcer on the leg, but you cannot restore vitality to a mortified part; ulceration will be set

up around it in the same way that ulceration arises in the gum around the crown of the tooth, preparatory to the attempt on the part of nature to get rid of useless and offending matter.

I would also tell you, you should study the opinion of Mr. Donaldson Mackenzie; there is a paper by him upon the predisposing causes of dental caries, published in the Medical Times and Gazette, October 28, 1854, which contains some useful remarks, even if not perfectly correct. His opinion is, that caries always commences on, and not in the teeth, and founded upon this opinion is his advice to use the file at an early period of the disease. You may study his paper, but afterwards judge for yourselves.

I will, before quitting the subject of caries of the tooth, give you the opinion of another author upon the pathology of caries, that of Mr. S. J. Salter, as detailed in a paper read before the Medico-Chirurgical Society, June 26th 1855, which is well worthy your perusal.

Mr. S. J. Salter states, "When dentine becomes carious, the pulp becomes impregnated with calcareous matter, which produces a change in its physical properties, it first becomes firmer than natural, then hard and elastic, then perfectly hard and brittle according to the degrees of calcification which occurs intrinsically in the substance of the pulp, and not on its surface, differing in this respect from primary, and the other two forms of secondary dentine, it is displayed at sundry isolated points which are not interstitial deposits of earthy matter, but consists of animal matter impregnated with earth. As the calcification advances, the points enlarge, and at length form a dense coherent mass, which is *Osteo Dentine.*" "When the pulp has become perfectly calcified, the functions of the nerves have ceased, and the structure is without sensation; but at times, instead of Osteo dentine, the pulp is converted into crusta petrosa, the process, though morbid in its nature is reparative in its results." Caries of the maxillary bones is very rare compared with necrosis; I have never met with a case; but of the latter disease, instances are very frequent. I can recollect one or two instances in the days of my pupilage, when I used the key for the purposes of extraction, fracturing a portion of the alveolar processes so irretriveably, that it was afterwards removed, necrosed; and I feel assured, that the same mishap must have happened to every heavy-fisted apprentice, whose duty it is to draw teeth without instruction, and to judge as to the proper treatment of toothache, as if the knowledge came into his head as naturally as the knowledge of good and evil, and without regard to the future effect

upon the poor unfortunates who happened to fall in the way of his tender mercies.

Thank goodness, however, that day is drawing to a close, the sun of wholesale tooth-drawing is setting; and upon you, gentlemen, and those honourable men associated with you as the promoters of this Dental College, will devolve the duty of responding to the public call now being made for educated dentists.

Necrosis of the jaw may arise then from injury, or from the violence of inflammation; the injury may be so severe as to destroy the chance of recovery, although the jaw may be very severely fractured, and yet necrosis will not follow, especially if the health is in a good state, for it is a condition more depending upon the general health than altogether upon local causes. In speaking of abscess, I alluded somewhat to the small sequestra of bene which sometimes follow that process. It may, however, involve a large part of the jaw-bone, more especially the lower jaw; matter continues to form around the dead part, and sinuses form in the cheek and beneath the ear, leading to a very disgusting state of things, which will cause the patient to submit to anything to get rid of the offender. The probe passed into these sinuses impinges upon the dead bone, and when this has been discovered, no time should be lost in removing it, being careful to be assured that it is dead bone, and not, as sometimes happens, a dead tooth or teeth. Those of you who may happen to engaged in any cases requiring such operations, may consult Mr. O'Shaughnessy's work on Diseases of the Jaws, with advantage. He goes into the details of the operation for removal, and gives several very interesting cases.

I ought here also to mention the effect of phosphorus upon the maxillæ, causing a disease which has made its appearance at our hospitals within the last few years, and is restricted in a great measure to those persons employed in lucifer-match manufactories. The disease only attacks persons having carious teeth, the phosphoric vapour being enabled to enter into direct contact with the periosteum, on which its irritating influence is subsequently exerted. The disease consists essentially of inflammation of the periosteum, terminating in necrosis, or death of the bone. A slow periosteal hypertrophy, says Mr. Simon, who has described this disease, with gradual alteration of tissue, and a laminated growth of bone in the periosteum, and beneath it, constitute the first stage of the disease.

This stage is not attended with much suffering, and usually the

patient considers himself tormented with toothache; presently an attack of acute inflammation arises, great tumefaction and severe pain come on, the soft parts yield, the jaw, more or less completely, is at once struck with necrosis, and is seen lying in the midst of disorganized tissues, which pour out a profuse and insufferably-fœtid discharge. The case is now one of necrosed bone; the separation takes place in the usual way, and if the patient survives the constitutional disturbance of the second stage, the knife of the surgeon will be necessary to set free the dead bone. Now, in cases of this kind, prevention is better than cure, and whenever you have patients who are engaged among phosphorous fumes, be careful to warn them of the danger of inhaling those fumes, if they have carious teeth. If their dental organs are sound, there is no fear from this source. Should the disease have commenced, free incisions must be made along the line of the gums, down to the maxillary bones themselves; free incisions; and the remaining treatment must be managed upon general principles.

The next subject that will engage our attention is neuralgia; you will all know what I mean by neuralgia, without any close definition of the term; in fact, I do not know a physiological definition, and it is not in itself a precise term, but it will very well serve our purpose. It is not known in what part of a nerve the pain has its seat, or in what manner the nerves terminate, so that I cannot even fix the precise seat of the pain which constitutes neuralgia. It is an acute pain, commencing suddenly, occupying a certain spot, and radiating by pangs, or flashes, to the surrounding nerves, and in its radiations it follows the threads of the nerves, without extending to the neighbouring structures. There is no heat, no redness, no swelling, and the pain, after a continuance of a longer or shorter time, suddenly abates, to return at some future period with similar, or even greater intensity. The cause of neuralgia, like its seat, is unknown, at least the exciting cause, for in some cases the predisposing cause is more manifest. There are two classes of cases, one intermittent and the other pure, the latter being independent of every cause. It usually occurs in pale, luco-phlegmatic persons, and seems to be a disease of debility. It is therefore very common among those suffering from exhausting causes, such as over lactation. Some ladies will suffer from most violent pain after every time the child takes the breast, the pain evidently having its origin in debility, the result of the drain from the breast; but it may not acknowledge any such cause, and will some-

times be brought on by such slight touches or movements, as warrant the assumption of some magnetic condition giving rise to it.

The intermittent neuralgia is frequently a symptom of disease, and is often allied to ague, having its origin in similar causes, such as marsh miasma, and other sources of malaria; it usually comes on at a stated period, with great regularity, and seems to take the place of a regular ague fit.

Now neuralgia of both kinds may be seated anywhere. It will be frequently present in some portion of the dental nerve, as well as any other branch of the fifth pair. You will be frequently called upon to remove teeth which are the subject of this disease, and if you do not make out clearly the nature of the disease, and if you accede to his (your patient's) wish, and draw the tooth indicated by him, he will probably call upon you on the following day, and say you have drawn the wrong tooth.

You will not usually find the diagnosis difficult; except the pain, there is an absence of all the symptoms of inflammation. The pain comes suddenly, and goes as quickly. The character of the pain will guide you: you will know it from toothache, the result of exposed or inflamed pulp, by the pain in the latter case being centralized in one tooth, which is always tender when it is struck; and there is always a hole in it, and if the exposed pulp be touched, it is found to be exquisitely sensitive. Whilst if the case is one of pure neuralgia, none of the teeth will be tender when touched, and the patient will be enabled to eat, even without increasing the pain, unless indeed the neuralgia depend upon a local cause, peculiar to the teeth themselves, or, as is occasionally the case, from the presence of a foreign body impacted into the jaw, and irritating a nerve, but not exciting sufficient inflammation to produce its own expulsion. When the neuralgic affection depends upon some local irritation of the dental nerves, or from pressure upon a branch of that organ, it generally has its origin in a condition of the fang called exostosis. This is a thickening of the periosteum of the fang by the deposit of true bone, or at least substance analogous to the *crusta petrosa*, so that the fangs of the teeth affected with this condition, become thicker and larger at their apices, than in the middle of their length, and, as you may suppose, cannot be drawn very easily from their beds; an attempt therefore to extract will frequently end in failure, the extremities of the fangs are left in their sockets, and the neuralgic affection remains unrelieved. If you have diagnosed your case correctly, great care in extraction

may be successful, in which case the neuralgia departs, not again to return.

Should you be unsuccessful, I do not know of any thing more efficacious than large doses of iodide of potassium, given until the system is fully under the influence of the iodine. I believe I have cured some cases of neuralgia, dependent upon exostosis of the fangs, by this medicine continued for some time.

If you believe that your case is caused by some exhausting drain, as over lactation, you must advise your patient to wean her child, and take abundance of good diet. Quinine and steel will also be useful in various forms and combinations, the citrate of iron and quinine, when other things do not forbid its use, will be especially beneficial. When the neuralgia depends upon malaria for its origin, when it is intermittent in its character, you will generally cure it by iron and quinine, with port wine, taking care to see that these medicines do not interfere with the action of the liver and bowels.

If these remedies do not suffice, you had better recommend a change of air, as some local cause of malaria may interfere with the action of your remedies. But at times you will meet with cases which will baffle all your skill, will not yield to any of your remedies, you may divide the nerve (which has been repeatedly done), the affected branch of the nerve, without relieving your patient in the least; and what to do then I really cannot tell you, but as necessity is the mother of invention, I hope the day is not far distant when some remedy may be discovered for these obscure affections of the nervous system, which at present are the *opprobria medicorum*.

You will understand from what I have said, that nine-tenths of the cases called facial neuralgia are not really so; they have their origin in inflammation of some portion of the nerve pulp, or the dental structures, and are not cases of true neuralgia. It will be important to make this distinction, as the remedies that are correct for neuralgia proper, will fail if your case depends upon some other state.

Sometimes a severe neuralgic affection is caused by the condition of the secretions of the mouth. You will recollect I told you that Mr. Donaldson Makenzie believes that caries always commences on and not in the teeth Whether the term always is correct is a matter of opinion at present; I think he is not correct, but undoubtedly it is so sometimes. Undoubtedly the enamel may be removed from the surface of the dentine and then the dentine will become carious, just as the end of the finger would ulcerate if the skin was taken off, and in

the end your tooth will be destroyed. Now it occasionally happens that we meet with persons in whom the enamel is almost all removed, and if we test the secretions of the mouth in these persons we shall find them to have at times a strong acid reaction, and this will be especially the case if they are suffering from neuralgic pains; it seems as if the acid secretions of the mouth were gradually destroying the teeth, exposing the dental pulp, and exciting neuralgic pains from the mere contact of irritating acid secretions, for we frequently find the pains relieved by washing the mouth with an alkaline lotion.

It is by forming an acid (the lactic acid) that sugar acts injuriously upon the teeth, and those persons who are very fond of sweets, will be sure to suffer unless they are careful to remove all trace of sugar from the mouth, for the warmth of the position soon excites a fermentative action, and lactic acid is developed. In the same way also many persons suffer severely from diseased teeth after great illness, as for instance after fever. During the existence of typhus fever the secretions of the mouth are acid, and these act so far upon the enamel as to make minute holes through it, which become carious when the patient has recovered and the teeth have been freely used. In the majority of these cases the state of the teeth will be referred to the medicine that has been given, and it is a very common custom for dentists to say as much to those who consult them. I have frequently met with persons who have been highly indignant with their medical attendants for spoiling their teeth. They might just as well blame them for the loss of their hair, which also came off, or the scaling from their skin; scarcely ever have I met with an instance in which I could only say the injury to these teeth has been caused by medicine, and the only possible cases in which such a charge could be substantiated would be such cases has have been profusely salivated, and also those in which the strong mineral acids have been prescribed without giving due precautions in regard to the method of taking them.

In the first instance, viz. that of profuse salivation, we shall be most likely unable to judge how far the action of the mercury was the cause of the patient's appearance before you, inasmuch as the action of mercury is so well understood now, that it is never pushed to that extent, unless it is absolutely necessary to save the life of the patient. It will be wise, therefore, for you to represent as much, and not to be the means of continuing a false impression on the mind of your client.

I would recommend you here, again, to be especially cautious in your behaviour towards the members of the medical profession; never advance an opinion that may perchance be untenable, if it reflects at all upon the conduct of the medical attendant of your patient, or the treatment he has pursued; you may rest assured that it will be repeated again, with embellishments and variations, and will produce ill will towards yourselves individually, and if the medical man is one obliged to act as dentist to his poorer patients, it will undoubtedly react injuriously against the interests of the Dental profession. You must recollect that you will be—you must, by the very force of circumstances—be regarded as interlopers by the men of the old school, and also by the greater number of my professional brethren whose patients cannot generally afford to pay the charges of a first-class dentist. A few years, however, will I feel assured, see a change come over this part of our story, provided you carry out the intentions of the founders of this college, and make your profession what it ought to be, viz. recognized as a learned one; then will there be no fear of your being regarded in any other light than as useful, and I may say powerful auxilliaries to the medical profession.

The next subject that will engage our attention will be that of *tumours*, a term often applied to any swelling, but most properly restricted to a morbid growth, either by the enlargement of natural parts in an unnatural manner, or by the organization of matter which is unnatural, and not properly found in the tissues of the human body.

Tumours may be divided into two classes, those which from their intractibility and dangerous character may be called *malignant*, and those which are not in themselves attended with any danger, and being comparatively innoxious may be called *benign*.

Malignant tumours are those enlargements of parts depending upon some constitutional vice, some unnatural state of the system, by which they are developed, take root, and grow to a considerable size, frequently in a short time, but occasionally in a very slow manner: they resist all remedies, and tend to convert the surrounding tissues into their own substance. They spread rapidly, ulcerate in a most virulent manner, destroy muscles, bones, bloodvessels, producing frequent and exhausting hemorrhages, and at times are exceedingly painful, as well as very frequently fatal.

I can of course scarcely do more than enumerate their names, and you must, if you please, search out for yourselves the way to distin-

guish them, as well as some part of the treatment to be recommended for their removal. They may have their origin in the bony substance of the jaws, or the tissue of the gums, and, in fact, in any part of the system; and it will be highly important for you to make out their origin and attachments, before deciding what steps should be taken for their removal; but, however, unless you are intending to become members of the College of Surgeons, you will scarcely expect to have to perform any of these operations.

The principal malignant tumours or growths, are—

Hard carcinoma or cancer, or schirrus
Mellanosis
Medullary sarcoma
Osteo sarcoma

The *Hard Cancer*, or *Schirrus*, is known by the character of the pain, darting, lancinating; by its excessive hardness with softer points —by its tendency to involve the skin and all the surrounding tissues. In tumours that are non-malignant, you may generally move the skin freely over the swelling, but in cancer this cannot be done. You will also find, that there is a so called cancerous cachexia, that is, a peculiar appearance of the patient, which, once observed in a bad case of cancer, is never forgotten.

Mellanosis is much less frequently seen as a disease of bone; it consists in a morbid product, presenting a black or deep brown colour, unorganized, and differing in the form it assumes; and also in its consistence it is frequently mixed up with schirrus or encephaloid disease, and is evidently a branch of the same tree.

Medullary Sarcoma is another tribe of the same character, in appearance much like the substance of the brain, hence another name, encephaloid; it frequently arises in the cancelli of bone; it may have its origin in the antrum; it partly absorbs, and partly forces open the shell of the bone, and commits most awful ravages in a very short space of time.

Osteo Sarcoma is a kind of cartilaginous growth, consisting of numerous cysts—containing reddish fluid, and having plates and spiculiæ of bone dispersed throughout.

There are some other divisions, as *Cystic Sarcoma* and *Colloid*. Now, all these diseases return again if extirpated; they have a constitutional cause, although, in the first instance, they may have had a local origin. I know of no means of curing them.

Not so the non-malignant tumours, they are all capable of cure, or

relief to some extent; they may have their origin in the gum, or in the mucus membrane adjacent to it, or in the periosteum of the bone, or of the teeth, or in the jaw bones, or the teeth themselves. They are—

1. Epulis
2. Epithelial cancer
3. Hypertrophy
4. Fibrous growths
5. Fatty growths
6. Membraneous cysts
7. Erectile tumours
8. Osseous tumours.

Epulis is a form of disease originating in the gum, as a simple enlargement, or hypertrophy, or as a circumscribed tumor growing from the gum, and occasionally attached to it by a narrow pedicle; it is usually slow in its progress, and forms a hard painless swelling, projecting from the alveolar border of the jaw, at first smooth, it afterwards becomes rough and tubercular, softens, and ulcerates, then bleeds freely. As the swelling increases, it extends around the teeth, and encloses them, and often seems to have originated from their sockets; sometimes it is merely indurated gum, and in other cases it has dense fibrous tissue, with irregular scattered particles of bone in its substance. It is easily reproduced, and will certainly reappear, unless all portions of it have been removed.

Epitheliel cancer originates also in the gum, or the adjacent mucus membrane; it begins with swelling and induration; it then becomes wartlike, and rapidly ulcerates; it spreads slowly from its first habitat to all parts and all structures of the mouth, it is not at first painful, and it is long before it affects the general health; it is undoubtedly malignant in its character, but there is hope for the patient if it is entirely and early removed from the mouth. It is therefore highly important that you should recognize this disease, as well as epulis, before it has crept irregularly and indefinitely into the surrounding structures.

Hypertrophy is a term of general application, when the tissue of any part is thickened, without containing anything more abnormal than the deposit of coagulable lymph, or fibrous tissue; thus the gums may be hypertrophied, the periosteum may be thickened, or the bones themselves enlarged; (you will do well to study the

meaning of the term, as applied to general pathology; you will then be able to understand its application to diseases of the jaw.

Fibrous growths, or tumours, consist of nodules, or lumps of fibrous tissue, variously developed, as regards situation; the tumours may be white, compact, and opaque, with particles of bone scattered through it, or grey and dense fibrous tissue, originating either in the interior of the lower jaw bone, or from its alveolar border and outer surface, or it may be almost cartilaginous in its character.

Mr. Stanley states, that there is an instance of this growth in the museum of the College of Surgeons, of great magnitude, taken from the jaw of an adult female.

Sometimes we meet with *fatty growths*, swellings containing granules of fat intermingled with cells filled with glairly fluid, and generally originating in the interior of the jaw.

Membraneous Cysts, again, contain a glairly fluid, originating within the jaw. Mr. Stanley, our great author upon diseases of the bones, states that "These cysts in enlarging usually cause expansion of the walls of the jaw, and they are found to possess, more or less, complete osseous parieties, apparently formed by hypertrophy of the cancellous texture of the jaw; occasionally the membraneous cysts, instead of expanding the walls of the jaw, cause the absorption of its outer wall, so that the tumour they form projects on the outer side of the jaw. This disease is usually of slow growth."

Another form of swelling consists of *Erectile Tissue*, also originating in the interior of the jaw; this tissue being of a character allied to the aneurismal tumours, which are also found in this part of the body, as well as everywhere else. An aneurismal tumour may generally be detected by the throbbing or pulsating sensation which it communicates to the hand upon pressure. You must be especially careful to detect these, should they ever come to your notice, as highly dangerous, and even fatal results might ensue if you thoughtlessly treated them as you would into a mere gum boil.

The last kind of tumour I shall consider is perhaps the most important.

Osseous tumours or exostosis. Some of these are hard, others are not so hard, being composed of cancellous texture, or they may be partly osseous and partly fibrous. The true exostosis is known by being hard, free from pain, and slow in its growth: there is no constitutional mischief, and the surrounding parts are healthy. Its microscopic as well as chemical qualities, are precisely the same as

true bone, at least the differences in the proportions of the ingredients may be referred to the different degrees of hardness in the specimens analysed, rather than to any actual difference in composition. Most exostoses have cartilage for their base, and a cartilaginous growth preceded the formation of bone in the first instance, the osseous substance being deposited in the centre of the cartilage, and it increases like the ossification of bone in a young subject. Exostoses vary much in figure, some being attached to the bone by a narrow neck, and others by a broad and lengthened base. Some are moveable by reason of the very narrow neck with a cartilaginous structure, or from the bony neck having been broken. Their surface may be smooth or nodulated, and they increase in an irregular manner, sometimes rapidly, and then again are quite stationary. They at times seem hereditary, and I am acquainted with a family in which every one of the children have exostoses on some part of their skeleton. Their correct diagnosis is important; recollect then, the hardness, the freedom from pain, the absence of constitutional disturbance, and of surrounding disease; the evident connection with the bone from which it springs, and its slow growth, and you will not have any difficulty in deciding its nature. When the tumour is more of a cartilaginous than of a bony nature it is usually called an enchondroma.

The situation of an Exostosis is always an important consideration; the tumour is in itself harmless, but when from situation it presses upon nerves, or repels or impedes movement, it is necessary to remove it, and its removal must be complete and entire, or it will return again. Many other plans have been recommended for its cure, but the knife is by far the most effectual, and the only certain cure. The most frequent seat of exostoses which will fall under your notice, will be the fangs of the teeth; they are occasionally met with upon the lower jaw bone, but very seldom upon the upper. Enchondromatous tumours occur, occasionally upon the alveolar processes of the upper jaw, but you will seldom meet with them.

Time warns me to bring my discourse to a conclusion. There are of course great numbers of diseases passed by in silence, for I can only look upon this course as preliminary to a more extended series at a future period. I thank you heartily for your kind attention, and would beg you to recollect, that merely attending a Lecture will never teach you how to practise your profession; you must study for yourself, and read carefully upon every subject that will be likely to fall under your notice. Study it from its foundation, consider it in its

every phase, and you will then be in a better position to advance the practical part of dentistry when you are your own masters.

As regards the works that will be useful to you, you ought to pay particular attention to your own Dental Authors, among whom stands pre-eminentiy forward, your highly esteemed President, whose work will long be the students manual. His presence prevents me saying all that I consider due to it. You will, however, find more dental authorities among the Americans, than in our own country. I believe Dr. Harris is the most esteemed, whilst I have derived great advantage from Dr. Bond's observations. As regards General Surgery and Pathology, you will find Hunter's works worth your attention. Simon's Lectures upon Pathology, Dr. Carpenter's Physiology, and the first Lectures of Dr. Watson upon Medicine; Stanley upon the Bones—Travers on Constitutional Irritation, will all be worth serious study, and you will find that many of the points I have advanced are upon their authority.

There is one point I will also take the liberty of recommending to the Council of your society—never rest for one moment from your labours until you have established a

DENTAL HOSPITAL AND DISPENSARY.

The poor of this great metropolis require aid, and your students require ocular instruction. Your course of study will never be complete without clinical lectures, and the positive education afforded by hospital practice: do not lose sight of this point, as you value the advancement of your profession.

Gentlemen, I thank you for your kind and attentive hearing.

THE TEETH OF PAST AND PRESENT GENERATIONS.

And Statistics regarding the Health of Town and Country Populations, &c.—An Answer to Mr. Perkins.

BY JAMES HORNE, ESQ. (Glasgow).

We are indebted to Mr. Perkins for presenting to our notice, "Statistics," in relation to the City of Geneva, shewing us, that in former times, in the year 1600 for instance, the duration of life in that old independent and republic city, on the average, was 21 years, and in 1833, nearly 40 years. From the facts thus presented, he deduces very important conclusions. That as human life in cities is now on the average longer than it used to be with former populations,

so must present populations be stronger, and more healthy, and their teeth must be better. These are his words :—" I think, that having shewn that health and longevity have improved, we have a right, in the absence of proof to the contrary, to assume that health have also improved; if they have not, it speaks but little for our profession generally." We will say nothing of the ignorance or intelligence of the dental profession, seeing that Mr. Perkins is a member of it; and, like the rest of his profession, has very little to do, I presume, with the birth, or nature of his patients, or the varied good or bad influences acting upon their health and teeth, prior to their being presented to his professional attention. If, however, the dental profession are not competent to arrest decay of teeth in the children of the present population, one thing is quite certain, that human teeth in all civilized countries are being paid more attention to than used to be the case even 30 years ago. If then, with all this attention—with all our advanced civilization—with all the estimated increase of human life in cities, teeth are not so good in the children of the present generation, what becomes of Mr. Perkins's theory and deductions? " That as longevity in cities improves, teeth must be better." Now, my experience proves to me, that teeth are worse than they used to be, and I think, if Mr. Perkins is an old practitioner, and has had much to do with children's teeth, he will admit the fact! What do almost all dentists affirm from their experience, whether in England, Scotland, or France, or America, or Australia? Why, that " the teeth of the present generation of children are much worse than their fathers." As we cannot get at " teeth statistics," we must be content with the experience of dentists, medical men, and the parents of these children. I refer to the cities of London, Paris, Glasgow, New York, and most of the cities in America, and at Melbourne in Australia. In these cities, teeth are worse than they used to be. This opinion is pretty good authority as far as opinion goes, and we must leave it for dental institutes, and colleges, and dispensaries to confirm or reject this opinion by producing " statistics." Not only do I think that teeth are worse in cities, with all their scientific civilization; but city teeth are worse than country teeth, and Mr. Perkins must not be surprised if I take advantage of his own theory to prove this. He attacks country or savage life, or in other words, defends city health, against ancient health; and civilized teeth against uncivilized teeth. As country health, or circumstances approaches much nearer to savage life than a city residence, I now come to prove this

position, by "statistics," and they do prove that in the healthy country districts of England, of the same population, one person only dies out of 57. In London, one in 41, and in the City of Liverpool, one in 30. Professor Camper states, that in Paris, out of 5980 infants of the Foundling Hospital, though carefully attended, 4095 died in the first month. 673 in 11 months, and in five years only 886 were found alive. Now look at the City of Glasgow. One-half of all the deaths occurring in the city, are amongst children under five years of age; and that nearly one-half of all the children born die ere they reach adult age; for instance, births 15,807, deaths 11,373—and deaths under five years 6145—under 20 about 1237.

In Melbourne, eight years ago, the deaths of children were at 80 per cent. Your English statistics shew, that when your population of London was at 1,594,000, there were 477 deaths from teething, while out of a country population of 1,599,000, there were 78 deaths only, a difference against cities of 400 save one. In 1838, with a population in towns and cities of 1,841,377, there were 1257 deaths; while out of a similar population, in seven country districts, there were only 204 deaths, a difference against cities of 1053. In 1839, in a population of towns there were 763 deaths, while in an agricultural district, of similar population, only 179 deaths, or 484 against cities. What a grand prestige is attached to the accumulations of vast populations! these mighty aggregations of individuals for the world's wonderings.

Shall we take comparisons of out-of-the-way districts, far from these refining civilization cities, and venture to compare teeth one against the other, so that we may approach nearer to the ancient times (but not of miasmatic wynds, courts, and alleyed cities), and these ancient times were half barbaric.

Let Mr. Perkins go to Connaught, in Ireland, take 500 of their adult, half starved, hardy, people, and compare their strong and powerful teeth, with 500 of the children, or youth of London! or go to wooded Windermere, in Cumberland, where you will find families, who for several hundred years have resided in the strong healthfulness of shepherd and agricultural life, and also compare their teeth with your boasted refined civilized teeth. Mr. Perkins shall select any wild savage district he pleases, with an equal city population, of London or Glasgow, and the country teeth shall be the best. Why I speak thus strongly in favour of country (or ancient teeth, if he likes it better) is, because, since 1842 I have paid some little attention to

city *versus* country teeth. I visited Paris, Orleans, Lyons, Lille Bordeaux, Marseilles, Rouen, Havre, &c., in 1843 and 1844, and whenever I had the opportunity of seeing town and country teeth, or of asking questions upon the subject of medical men, or other persons, I invariably found country teeth better than town teeth. In London, I have had equal evidence given to me of city teeth being worse than country teeth. In Glasgow it is most remarkable, and if Mr. Perkins only saw the teeth from some of our Highland districts (the more away from refined cities the better), he would never dream of comparing them, either with Glasgow, or London, or Paris, civilized teeth.

For other proofs let us glance at America. Are the teeth of even adults, say nothing of the children of New York, Philadelphia, Baltimore, Washington, Boston, &c., equal to their ancestors? Let them shew you their artificial teeth as an answer. If we could but see the children of the pilgrim fathers, or colonists—when Raleigh, Lane, Baltimore, and others, colonized Carolina, Virginia, Maryland, New England, &c., and compare them with the fearful teeth of New York, and other cities, it would, I expect, give quite sufficient answers to the lovers of modern teeth. Is it not a well-known fact, that ladies in New York will often ask strangers (who have natural good teeth), "Who is your dentist," so rare is it for them to expect to see good adult natural teeth. And what are we yet to see of American cities, with their go-a-head refinements, luxuries, excitements, and wonderful progress? Why if America goes on increasing in its population, in the same ratio as it has done since 1830, when it was 12,866,000, it will have 450,000,000 of people in 1950! what will their cities then be, and what their teeth, if we are to judge by what they now are.

Look again at the report of the last quarter of 1857. In the town or sub-districts of London 60,186 persons died, while in the country districts 50,511; thus the town mortality was at the rate of 2.704 per cent. while the country districts were at the rate of 1.926 per cent. per annum. There are some 64 districts, chiefly agricultural, where the mortality is only 17 per 1000 year after year. In England and Wales it is 22, and in London 25 per 1000. Mr. Perkins need not have gone to Geneva for statistics; his own country can well afford them. In the sixteenth century the population of London lived 20 years on an average, and 50 died out of the 1000, thus the excess of old civilized London in mortality over the barbarous agricultural dis-

tricts was 33 over 17. I have thus, in a general way, endeavoured to hastily shew, that if we are to take Mr. Perkins's deductions as positive truths, country teeth must be better than refined civilized teeth. Now, as to our experience of savage and barbaric teeth, or those classes who live far, far away from the civilization of the nineteenth century. In what condition were the teeth of the red men of America, the Tasmanians of Australia, the South Sea Islanders, the Hindoos, the Circassians, Arabs, &c.? As far as we can get information from missionaries, medical men, and travellers, bad teeth are the exception. I have on many occasions spoken to parties who have been amongst these people, and all speak of their having good teeth. It would be absurd to compare them with the teeth of the present generation. I could give the names and occupation of the parties I have spoken to on this subject, but it is not requisite. If Mr. Perkins will for the next ten or fifteen years make the same inquiries that I have done, I have no doubt but that he will come to rather a different conclusion in regard to savages, that is, when he makes comparisons with teeth. It does not, however, rest with either Mr Perkins, or my opinion, or the statistics we may bring forward, although, as old Montaigne would say, "*Vous et un compagnon êtes assez suffisant théâtre l'un à l'autre, au vous à vous mesme.*" If the Dental Professors of experience will come forward and give us the result of their past and present practical knowledge, I have a very strong conviction they will agree with me, that the teeth of the children of the present generation, and particularly in cities, are worse than their predecessors, and give a denial to the theory of Mr. Perkins.

CONSTRUCTION OF ARTIFICIAL TEETH UNDER DIFFICULTIES.

It has occurred to me, that results of a very useful and interesting nature would be arrived at, if practitioners generally would take notes of cases requiring more than ordinary ingenuity for the successful adaptation of artificial teeth, and publish them in the pages of the Quarterly Journal of Dental Science, under the title which I have placed at the head of this communication. Acting under this impression, I would wish to record a somewhat singular case which I

have had in my practice, hoping that others will give the profession the benefit of their experience in extraordinary mechanical cases.

Some two years ago, a gentleman consulted me upon the state of his mouth. In his upper jaw there were five front teeth—the centrals, laterals, and a canine, and the second molars; the remaining teeth he had lost. Of the lower teeth but few were missing, and all the teeth in both jaws were tolerably free from disease, but in consequence of an edge and edge bite, they were more than half worn away. A disagreeable sensation was complained of in opening and shutting the mouth, especially in mastication. The idea of the patient was, that I should fill up the spaces in the upper jaw with artificial teeth; but I explained to him that this proceeding would be of little service, as it was essential that the substance which had been worn away from the teeth should be made up, otherwise the unpleasant sensation he experienced in mastication would only get worse, as the teeth were ground down, and the jaws still more unduly approximated together. I should mention, that the upper molar teeth which remained in, had no antagonistic teeth in the lower. Upon consideration, the case was proceeded with by fitting a bone piece so as to fill up the places of the lost teeth, and that portion of the front teeth which was worn away; this was done by capping the latter, leaving but the fronts of the teeth exposed. The block was then carved into shape and placed in the mouth, the result proving entirely satisfactory. The appearance was greatly improved, and the uneasiness in the jaws quite remedied. With regard to the *usefulness* of the piece *in mastication*, I need only say, that the wearer (a hearty farmer) has lately called upon me, and I found he had never had any trouble until within the last few weeks, when the stiffness in the jaws returned in some slight degree. This, I found, was owing to the masticating surface of the piece having been worn down considerably. I have constructed a new piece, similar in every respect to the old one, and all is again well.

I do not make known the notes of this case as one of an unprecedented nature, but as it is the only one of the kind that has come under my notice in the course of many years' practice, I think it possesses some interest. At any rate, I hope it will pave the way for publishing mechanical cases occurring out of the ordinary way.

E. C. J.

CORRESPONDENCE.

THE LATE PROCEEDINGS OF THE COLLEGE OF DENTISTS.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—The College of Dentists of England has now, I trust, recovered from its late attack of severe indisposition, which at one time, and for some *length* of time, threatened its entire dissolution. It has hitherto been extremely unfortunate, not only since its actual existence, but previous to its birth, it having required the most persevering, and I might say distressing labour, to bring it forth safely into the world of public opinion; so many enemies did the very report of its embryo state raise up against it, that it was with the greatest difficulty imaginable it at length made its little voice heard; and when the poor child, with well inflated lungs, lifted up its voice and cried aloud its NAME and INDEPENDENCE, how sad, how humiliating to honest manly minds was the sight of so much *soi-disant* greatness, clothed in all the littleness of clique, jealousy, and vulgar scandal, endeavouring with the cloven foot of malice to stamp out its very existence.

But the baby was a healthy one, notwithstanding the untoward circumstances of its birth; its parents were at least HONEST, if they were not rich and great; except in that poor but true greatness, goodwill to all men. In this at least they were rich, when, in all honesty and straightforward manliness they proclaimed publicly to the profession the conception, which they hoped, by the assistance of kind friends, to mature into a lasting benefit to the public and every right-thinking Member of the profession. They found friends, but they also found enemies; those enemies involuntarily increased the number of friends to the new cause, and as persecution begets proselytes, as exercise begets strength in the muscles, and as practice brings perfection, so did the vituperative malice of little-minded greatness assist in consolidating the health, and establishing the cause of the College of Dentists of England.

That it was healthy and capable of great things its first year's transactions fully prove; I will not then, in this place, enumerate

what those transactions were, as every member of the College has been furnished with a copy of them ; but I think that it may be useful to endeavour to trace the causes which have led to its late lamentable indisposition, which I have alluded to in the commencement of this communication.

The exciting cause of the late unhealthy action in the College was the wish to unite with a certain body, which had from the commencement of the reformatory movement, been its greatest enemy ; the direct and absolute cause of the great trouble into which the College ultimately fell, was the way in which that wish was met and managed, by certain members of the College, who were delegated to protect and represent the interests of their fellow members, in proposing and maturing terms honourable and proper to unite the two bodies. Now, Sir, I say fearlessly, that had those delegates done their duty to themselves and to their constituents, either the union would have been honorably effected, or they and the College would have come unscathed and unsullied from the ordeal through which they had passed in endeavouring to make terms of union and reconciliation between two antagonistic and by no means friendly bodies. But did they do their duty ? Let us see. In the first place they were all pledged to the laws and constitution of the College, which they had all helped more or less to frame ; secondly, not one of them had signified his dissent from those laws, nor had the Council of the College or the Members at large, thought it fit or necessary to absolve them from their allegiance to the laws. Again, the office of delegation *was not forced upon them*, they certainly obtained it by their own seeking and contriving. What then was their position when entering upon their duty ? Clearly this. To abide strictly by the laws and constitution of the Society which they represented, and under their guidance and without infringement of them in any particular, to bring about a good understanding between the adverse parties. Did they do this ? Did they endeavour to do this ?—To my thinking, neither the one nor the other ; they brought in terms, as contrary to the letter and spirit of the law and constitution, as light is to darkness, as day is to night, or as black is to white ; if it be argued that they did the best they could, I deny it at once, and tell them that it was their duty to have refused any terms detrimental to the body which they had the honour to represent.

If, again, it should be said that the terms were those of the parties with whom they were empowered to treat, I, on the

authority of the open declaration of their principal, relying on the truth of that declaration, deny that this was the case; that gentleman emphatically said—"They are *not* the terms of the Odontological Society, they are *our* terms—the terms of the Delegates." They therefore stand convicted on the confession of their principal, and by their own admission, that the terms, although contrary to the law under which they ought to have acted, were their own act and deed. Again; after the illegal terms had been presented for absolute approval or rejection, and when, notwithstanding all the influence they had the power of exerting, and I believe did exert in favour of the said terms, they were rejected by the majority of those who heard their merits discussed, did these gentlemen then return to their duty? Did they do anything to restore the good order which they by their departure from the strict line of duty had destroyed? Did they not on the contrary, persist in the wrong course they had entered on by sending circular letters to the Members falsely representing themselves to be delegates, after the decision had been given against them? Have they not by every factious and frivolous pretext prevented the proper business of the College from proceeding? Is it not by their unjustifiable opposition to *their own laws*, that the College has nearly ceased to exist?—I wait the answer of those gentlemen.

I have been told, that our laws are not like the laws of the Medes and Persians, unalterable—good, be it so: no laws ever were unalterable that I am aware of, except those said Median and Persian laws; but when sensible and honourable mon make laws, whether for an Empire or a small fraternity, they do not break them; if they are not perfect, they alter, add, expunge, or improve them by the same regular and constitutional process by which they were first framed; it *may* be expedient to alter a law, but it can never be justifiable to *break* a law, if expedient and possible to alter it. If those gentlemen had understood these simple and thoroughly sound maxims of good government and order, they would never have fallen into the egregious blunder of breaking through their own laws, by endeavouring to turn a constitutional government into a despotism; it is quite evident that they neither knew their duty nor their power, and hence the trouble that has afflicted the poor College.

I have now before me the Transactions of the College of Dentists of England, for the year of Grace 1857. It tells a tale highly

creditable to the efforts of those men by whom the College was ushered into existence, and by whom it has been supported since. But when I glance over the origin and development of the College, and read the fine, manly, and generous sentiments with which it teems; and then turn to the inaugural meeting—the address, and the enthusiasm with which it was received—the unanimity and entire harmony that prevailed throughout that large meeting, and afterwards reflect how many, then seemingly sincere men, have changed their opinions and deserted those sterling principles of honest independence, I do, indeed, Sir, feel sad and sorry that such a great and good foundation should have been laid by willing hands, who, in too many instances, have since been ready to scatter it to the winds. I would, most willingly, have passed these subjects over without a notice, but I find it impossible: they recall to my mind, men whom I could wish I had never known at all, or known them always as I knew them at that good time.

I will now, however, cease to regret the past, and say no more of the sickness of our poor charge, who, I am happy to say, is at length convalescent, and destined soon to rejoice in robust health, when, with willing and true men, I doubt not all will yet be done for the elevation of the profession and the safety of the public, that was first intended by the union of the dental body; but I would urge on the consideration of the Council, the rejection of all ultra and unnecessary rules, regarding examinations, or the curriculum of study to be adopted for the education of the rising dentist. Let the great and only aim be, to make the pupil a GOOD DENTIST; this, it is the duty of those who undertake his professional education, to perform thoroughly —but if more be insisted on, it will be looked at as an act of unreasonable tyranny, which will most certainly defeat itself, by driving pupils into a different profession; and may ultimately swallow up the dentist in a mongrel breed of everythingism and nothingism.

I have now only to add, that as the Council is at length completed, I feel certain that its Members will work harmoniously together for the general good, and that the College will rise triumphantly and more strongly than ever above the shafts of malice, or the envy of mistaken men: and I do hope, that those who will not help us, will have too much good sense to attempt to hinder us; and to remember, that the love of justice, common sense, and good order, has been the grand principle upon which those men have acted, who

have opposed terms that every cool-headed and impartial man must condemn as arbitrary, illegal, and subversive of the principles upon which the constitution of the College was founded, and which it is still the interest of every manly and independent mind to support.

Yours obediently,

WILLIAM PERKINS.

TAKING IMPRESSIONS OF THE MOUTH.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—I beg to offer to the profession, through the medium of your valuable Journal, a few remarks on taking impressions of the mouth, and the materials used in so doing. The importance of getting a perfect impression of the mouth, previous to constructing artificial teeth, is universally acknowledged; hence the value of any means or material facilitating so desirable an object. As I am about to describe various materials, I will begin with that most commonly used, viz.—wax. The best, I found, was always the newest yellow, and that should be unsophisticated; white is not so good as the yellow, nor can anything be added to improve it, therefore, pure yellow wax is better than any other; but even this, unfortunately, has many drawbacks, namely, the necessity of using hot water to soften the wax, which injures it very materially, its stickiness, its great liability to drag and to be distorted while being drawn from the mouth, and its contracting quality—disadvantages which are inevitable. I was, consequently, some time back, anxious of finding something more suitable for the purpose. I heard of dough, made of flour and water, being used; this, indeed, is not to be condemned, and might be employed as a good substitute, when better material cannot be obtained. I have tried white wax, mixed in different proportions with gum damar, but have found this composition so sticky and disagreeable, that I soon abandoned it altogether. I have also used plaster of Paris, and when a quick setting plaster can be procured, a perfect impression can be obtained with it, particularly when the dental ridge is free from teeth. Still, plaster of Paris is objectionable, on account of the time it requires to remain in the mouth. Lastly, I have found a new composition, free from all these objections, possessing, above all other compositions, most desirable qualities. With this composition I have

taken the most perfect impressions, one in particular, which I had the honour of exhibiting at a Meeting of the College of Dentists. This impression could not have been taken at all satisfactory with wax, or any other material in ordinary use. It was the impression of a deep cleft palate, very under cut on one side, yet it was taken most accurately; the artificial palate made upon it, answered remarkably well, and gave great satisfaction. The composition I allude to, is that made by Mr. Stent, to whom great praise is due, for having invented so desirable an article, and for enabling the profession to obtain it. Mr. Tomes, at a meeting of the Odontological Society (*see Dental Journal for December* 1857), at which Mr. Sercomb read a paper on taking impressions of the mouth, said, "as to the preparation sold by Mr. Stent, he had used it only during this last fortnight, and in about a dozen cases, and had found it answer very satisfactorily. In the lower jaw, a difficulty was often felt in getting accurate impressions, especially when the remaining teeth were very long; but with Stent's composition, that difficulty was entirely overcome, the material hardened in the mouth so quickly, that it was not liable to any distortion in removing it."

My own experience in the use of this valuable material, fully corroborates the very accurate remarks of Mr. Tomes, the more so, as I have used it exclusively for the last six months, and with uniform success. I therefore cannot but recommend it to my professional brethren, as the best material for taking correct impressions of the mouth, for obtaining a perfect bite, and for other useful purposes connected with Dental mechanism. Hoping the above remarks will be found sufficiently interesting to the numerous readers of the Quarterly Journal of Dental Science, I beg to subscribe myself,

Yours respectfully,

East Road, City Road,
May 31, 1858.

JOHN HUMBY.

DENTAL DISPENSARIES.

Quarterly Journal of Dental Science.

SIR,—The following letter, taken from a late number of the Lancet, I think is well worth perusal and consideration, by the profession generally, and particularly by those who seem to have a mania for creating *Dental Dispensaries* just now. If a qualified dentist were appointed at existing general dispensaries, as is the case at most of the London Hospitals, and those dentists did their respective

duties, I think there would be little necessity for getting up committees and subscriptions for special dental dispensaries, which, in my humble opinion, do little good, except to the gentleman who gets the appointment of dentist to the institution, and for whom it answers the purpose of a very excellent advertisement.

May 1858. Your obedient servant, INCISOR.

MULTIPLICATION OF MEDICAL CHARITIES.

Upwards of £1,000,000 of money is spent in the metropolis in the gratuituous bestowal of medical aid, and nearly 700,000 persons—one-tenth of the whole population—receive medical service for which they do not pay.—*The Lancet, Dec. 5, p. 585.*

To the Editor of the Lancet.

SIR,—The present position of the medical charities of London, on which I have already addressed you (*The Lancet, Dec.* 19, 1857, *p.* 637), is ill-defined and unsound. Many of the large hospitals are in pecuniary difficulties, the contributions which ought to come to them being diverted aside by a host of minor institutions of recent origin, not always aiming at the most pressing necessities of the people. The advertisements of these so-called charities jostle each other in the public prints; their notices soliciting the attendance of patients, court the eye like the announcements of a trade; their circulars pour in like those of tradesmen touting for custom; and their claims are put forward with a pertinacity which is more suggestive of the personal competition for a livelihood of some private parties, than of the management of the affairs of a charity. Gratuitous medical relief being thus largely offered and thrust upon society, a vast increase of recipients has taken place; and many persons, not proper objects of charity, constantly avail themselves of the opportunities thus sedulously afforded. The increasing number of recipients is appealed to as an argument for the establishment of new hospitals and dispensaries, the very multiplication of which, continues to attract fresh applicants for gratuitous advice. Thus we have competition between rival charities, a fictitious demand for new institutions, a hawking about of gratuitous medical service amongst classes who do not require it, and a total number of medical charities larger than the public can be induced to support. This condition of things I designate as unsound.

It has not been brought about by the benevolent donors to these charities. The fault does not rest with them. They simply desire

that their money should be applied in the best manner to relieve the sick who are in distress. In many instances they can *only* give; they cannot frame codes of management, or specify how or to what class of persons their charity shall go; in leaving bequests, they cannot foresee the changing phases of society; all they wish is to do good, and good that shall be really and unquestionably such; they desire that their money shall supply an existing urgent want, not that a want shall be got up and created to meet their charity; in short, they desire to afford relief to those sick persons who cannot in any other manner obtain it. Very seldom are precise and discriminating conditions attached to such gifts. The donors are people of all shades of character and education—persons who may or may not be intimately acquainted with the working of medical charities, and with the situation and wants of the lower ranks of society, being only alike in this one noble feature—the desire to do good. How and to whom this good shall be done, rests with the managers of the charity, who are trustees with a very wide discretion, to decide. And their responsibility is not small. It is their business to find out what specific mode of proceeding, in accordance with the wants and circumstances of the day, and with a due regard to the ground occupied by other institutions, whether legislative or voluntary, and to the effects of such proceeding on the community, will best carry out the spirit and intention of the donors; and then to make it known, and put it in practice. To do this effectually is at present no easy task. The simple method of administering such trusts employed in former times, will no longer answer now. And although the management of them has been in a high degree conscientious, and considerate, and painstaking, constituting another valuable donation—that of time and labour—to the institutions in question, yet much remains undone and overlooked, the want of which has helped to bring about the present unsound position of medical charities. So far as this is a fault, there is fault to find with the governors of hospitals and dispensaries.

But a great and positive fault, not of omission, but of commission, rests with the medical profession; who, often for private ends, are much too forward in promoting the establishment of new medical charities; a proceeding the most short-sighted and suicidal to their own interests as a body corporate, and highly injurious to the community. Good results to all from the establishment of such charities as are really necessary, but harm and loss to all parties from the opening of institutions which are not required.

With your permission, Sir, I propose to return to this important subject, which I only wish was in abler hands than those of

Your obedient servant,

A GOVERNOR OF A LONDON HOSPITAL.

Eltham, Jan. 1858.

CHEMISTS AND DENTISTS.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—Will you allow me, through the medium of your impartial Journal, to point out to the Members of the Dental College, that if they are to become an incorporated body, they will not be able to exclude *any respectable man* from their ranks, if he can prove himself competent to practise as a dentist, even though he should think proper to combine the business of a surgeon, of a chemist, or of any thing else, with that of dentistry. Why then maintain a *pro tempore* exclusiveness? With a Society like the Odontological, it is perfectly consistent to admit such only as hold opinions palatable to the promoters; but, in a body established as the College is, with the object of providing a public institution for educating and examining pupils, it is *not* consistent to exclude men who can and do perform all the operations required of the dentist, equally well with the Members themselves, simply because they exercise the liberty of Englishmen, in choosing, often from necessity, to combine another business with the practice of the dental profession. If examination is to be the test for membership, I venture to predict it will be found, that many of the class, often sneered at as "chemists and dentists," will pass the ordeal with quite as much credit as those who are *ignorant* of chemistry and drugs. I am, SIR,

Your obedient servant,

A CHEMIST AND DENTIST.

London, June 1858.

To the Editor of the Quarterly Journal of Dental Science.

June 21st 1858.

SIR,—In a letter to the British Journal of Dental Science, for June 1858, I have stated that the scrutineers appointed at the meeting of Members of the College of Dentists, held on May 21st, were Messrs. Matthews, Rymer, and Turner. I have since been informed,

that it should have been Messrs. Spencer and Turner, Messrs. Matthews and Rymer only assisting at the scrutiny officially as Chairman and Secretary of the meeting. As your publication will be issued in a few days, I should feel much obliged by your inserting this, and thus enabling me to avail myself of the earliest opportunity for correction. I am, Sir,

Yours faithfully,

Charles James Fox.

27, *Mortimer Street, Cavendish Square.*

THE ELECTRIC CAUTERY.

To the Editor of the Quarterly Journal of Dental Science.

Sir,—I have just received from Messrs. Ash & Sons a very perfect Electric Cautery Apparatus, made on an improved principle, under my superintendance, which will not only well and fully answer the purpose for which I recommended it in my paper, published in your Journal, but at a more moderate price than any hitherto brought out; it is indeed most complete, and as I have many and frequent letters from dentists, asking me where they can procure such a one as this now produced, I thought that perhaps you would kindly cause this information to be inserted in your next number, and oblige

Yours obediently,

June 2, 1838. Thos. H. Harding.

19, *Park Square, Regent's Park, N. W.*

To the Editor of the Quarterly Journal of Dental Science.

Sir,—The object of my communication, published in the April number of the Quarterly Journal of Dental Science, was not to draw attention to "A case of necrosed bicuspid tooth," as set forth in the table of contents, but to the fact that my patient had been unable to open her mouth for the space of fifteen years.

The extraction of the tooth had nothing whatever to do with the inability to separate the teeth. I am, Sir,

Yours faithfully,

F. A. Sass.

39, *Manchester Street, Manchester Square.*

June 1858.

CHEMISTRY.

CHEMISTRY OF GOLD IN CONNECTION WITH ITS USE IN DENTISTRY.

By B. H. Paul, Ph. D.

Since gold is almost always met with native, and in a state of comparative purity, the metallurgic operations by which it is extracted from its ores are extremely simple in most cases. The working of certain auriferous minerals, such as the galena, copper pyrities, and iron pyrites of many localities, and the tellurium ores of Transylvania, involves operations of a more complex character; but the extraction of gold in these cases is only an accessory to the production of other substances. Although native gold contains only very small proportions of silver, copper, and the rarer metals, such as palladium, iridium, etc., it is necessary to separate these admixtures. This constitutes the art of refining, which, as practised at the present time, is generally effected by treatment in the wet way, either with nitric, sulphuric, or nitrohydrochloric acids.

For the separation of silver from gold by means of nitric acid, it is necessary that the two metals should bear to each other a certain quantitative relation—that the silver should not amount to less than twice the weight of the gold with which it is alloyed. If the amount of silver is less than this, it is either not at all acted upon by nitric acid, or only to a small extent. If the silver in the alloy amounts to more than three times as much as the gold, the separation of the metal by means of nitric acid is perfect; but there is an important difference between these two cases with regard to the condition in which the gold is obtained after the separation of the silver. Thus, when the silver amounts to more than three times the weight of the gold, treatment with boiling nitric acid leaves the gold in a state of a finely divided pulverulent mass of a dark brown or black colour, according as the amount of gold is greater or less. In this condition there would be considerable risk of waste in collecting and washing the gold. However, this disadvantage may be easily provided against, for when the silver in the alloy amounts to from two to three times the weight of the gold, it is dissolved without the gold being disintegrated, the latter metal remaining as a coherent spongy mass of the same shape as the original fragments of the alloy. In refining gold, containing, as is frequently the case, from a few thousandths to thirty or forty per cent. of

silver, it is customary to add as much silver to the gold alloy as will make up the proportion of three of silver to one of gold. Hence the term quartation, applied to this operation. Generally the quartation of gold is accompanied by cupellation with lead, which, while facilitating the fusion of the gold and silver, at the same time effects the separation of the copper which is generally present to some extent in native gold containing silver. The action of the lead in this operation is two-fold:—First, as a solvent of the gold and silver, rendering them liquid at a temperature far below their melting points—secondly, in yielding, by its oxidation, a solvent for the oxide of copper produced at the same time. The melted alloy of gold, silver, lead, and copper, being exposed to a free current of air passing over its surface, the copper and lead are gradually oxidized, the solution of oxide of copper in melted oxide of lead being absorbed by the porous material of the cupel, until finally there remains only the pure button of gold and silver.

After the relative proportion of gold and silver has been established by quartation, and the copper separated, the separation of the silver from the gold, or as it is technically termed, the "parting" is to be effected by means of nitric acid. For this purpose the alloy should be in small fragments about the size of peas; to which it may be reduced by running the still liquid metal into water from some height. The nitric acid in which the alloy is boiled should have a density of about 1·2, and the ebulition should be continued for fifteen or twenty minutes. Concentrated acid may then be used for separating the last traces of silver, and when the residual gold is well washed with distilled water free from chlorides, and heated to redness in a crucible, it constitutes "fine gold," such as is met with in commerce.

It is highly important that the nitric acid employed for refining gold, should be quite free from either chlorine, hydrochloric acid, or sulphuric acid, since these substances would in various ways materially interfere with the result. Thus, in the presence of chlorine, or hydrochloric acid, a portion of the silver, at the moment of solution, would be converted into insoluble chloride of silver within the pores of the spongy gold, and as chloride of silver is not soluble in nitric acid, its separation would be effectually prevented. At a later stage of the operation, when the gold is boiled in fresh acid, some gold might be dissolved. The presence of sulphuric acid would in like manner give rise to the production of sparingly soluble sulphate of silver, and thus the separation of silver would be to a proportionate extent prevented.

The separation of silver from gold may also be effected by means of sulphuric acid. In this case the alloy should contain at least as much silver as gold; it is granulated, after the separation of copper by cupellation in the usual manner, and then boiled in concentrated sulphuric acid, in a platinum or iron vessel as long as sulphurous acid gas is given off. The solution of sulphate of silver is then poured off, the gold washed with water, and again boiled with a fresh quantity of sulphuric acid.

This method of separating silver from gold is much more economical than the parting by means of nitric acid, but it is attended with inconveniences that have been a great obstacle to its general adoption. Among these the offensive and unmanageable nature of the sulphurous acid gas given off during the operation, is one of the chief. In addition to this, platinum is not dissolved by sulphuric acid, but remains with the gold. About three per cent. of silver also remains in the gold that cannot be dissolved out by either sulphuric or nitric acid. This residual silver can be separated from gold that has been parted with sulphuric acid, only by treatment with bisulphate of potash or soda. The metal is mixed with about a fourth its weight of sulphate of soda and a fifth its weight of sulphuric acid, the whole heated until the salt becomes liquid, and stirred meanwhile, until the evolution of sulphurous acid ceases. It is a remarkable fact, that although sulphuric acid alone has no influence upon the silver left in gold after the parting, the presence of an alkaline sulphate at once determines the conversion of this silver into sulphate by the sulphuric acid. The sulphate of silver and sulphate of soda must be dissolved out of the spongy gold by boiling it with sulphuric acid as in the first instance, and it may even be desirable to repeat the treatment with bisulphate of soda. It is of importance to keep the temperature of the mass just below redness, in order to avoid the decomposition of sulphate of silver, and the consequent failure of the operation as regards complete separation of silver.

The gold refined by sulphuric acid is sometimes found to be brittle, and deficient in that softness which is characteristic of pure gold. This is owing to the presence of platinum, which, as was already remarked, is not separated by sulphuric acid. This metal may be, to a great extent, separated by fusing the refined gold with nitre, which has the effect of oxidizing the platinum; however, its separation is not complete, and gold is at the same time oxidized and dissolved by the nitre.

Gold, refined by either of these methods, cannot be rendered absolutely pure, although with careful manipulation it may be obtained of a fineness of upwards of $\frac{999}{1000}$. The perfect purification of gold is indeed a very difficult operation, and requires very great care and patience. The best method to be adopted for this purpose is to dissolve gold in nitro-hydrochloric acid, the aqua-regia of older chemists, and to precipitate the gold from the solution of chloride of gold, thus obtained.

The granulated metal, which by preference may have been refined as far as possible, by either nitric or sulphuric acid, is digested with a mixture of three parts hydrochloric acid and one part nitric acid, at a moderate heat, until completely dissolved. The solution is to be evaporated nearly to dryness, to separate excess of acid, the residue mixed with water, and again evaporated as often as may be requisite for getting rid of all nitric acid. The evaporation must not be carried too far, nor must the temperature be much above the boiling point of nitric acid, or else the chloride of gold might be decomposed. After separating the nitric acid, the chloride of gold may contain a trace of chloride of platinum, as well as some chloride of silver, which is dissolved to some extent by a strong solution of chloride of gold. To separate the latter, the chloride of gold is diluted with a large quantity of water, and the solution set aside for several days in the dark.

When the liquid appears quite clear, it is carefully drawn off from the sediment of chloride of silver, and is then ready for the precipitation of the gold. This may be effected by a variety of re-agents, among which sulphate of iron is generally employed. When a solution of this salt is added to the chloride of gold solution, there is a mutual decomposition, two-thirds of the sulphate of iron is converted into per-sulphate, and one-third into per-chloride, while metallic gold is deposited in the state of an extremely fine powder, of a purple, or even black colour at first, and gradually becoming yellow when it collects at the bottom of the liquid. To precipitate one hundred parts of gold, four hundred and twenty-three parts of the crystallized green sulphate must be used.

The precipitated gold must be thoroughly washed with water containing some hydrochloric acid, and may then be dried and melted with a small quantity of nitre and borax. As chloride of platinum is not decomposed by sulphate of iron, the gold prepared in this way will be free from platinum, and if the solution of chloride of gold is suffi-

ciently diluted, and left long enough to ensure the deposition of chloride of silver, it will also be free from silver.

When the gold is required in the state of sponge, a solution of oxalic acid is a better reagent for effecting the precipitation. But with regard to this particular, very much depends, not only on the reagent employed for the precipitation, but also on the way in which it is applied. Thus when the chloride of gold solution is poured into the solution of sulphate of iron, the precipitated metal is obtained as a much finer powder than when the sulphate is added to the chloride solution. By copious dilution of the chloride also, the precipitated metal is obtained in a very minute state of division, while concentration of the liquid, or precipitation at a boiling temperature, have the opposite effect.

The gold precipitated by solution of oxalic acid, has a fine yellow colour. The best way of obtaining the gold in the state of a fine powder, that will form a sponge, is to add to the concentrated solution of chloride of gold a small quantity of oxalic acid, then adding to the cold solution enough carbonate of potash to convert nearly all the gold in the solution into aurate of potash, lastly adding a large quantity of crystalized oxalic acid, and heating the liquid rapidly to the boiling point. By this means the gold is obtained in the state of a soft yellow sponge, such as is required for stopping teeth.

The gold of the Ural frequently contains, disseminated through it, small fragments of a compound of osmium and iridium, which have been found very troublesome in working the gold. More recently the same thing has been noticed in some of the gold from California. These granules do not alloy with the gold when it is melted, but remain imbedded in it, so that when the metal is rolled, it splits open, and exposes little cavities, filled with a black powder, consisting of iridium, the osmium having been for the most part volatilized. This impurity of gold interferes very considerably with its fitness for being worked, and its removal on the large scale involves considerable trouble; but on the small scale it may be easily effected by dissolving the gold with nitro-hydrochloric acid, which leaves the iridium undissolved as a black powder. When the diluted liquid has become perfectly clear by deposition, it will, when decanted off, be fit for precipitating the gold by any of the suitable reagents.

In purifying gold by the methods of quartation and parting, the nitric acid solution decanted off from the spongy gold, will of course contain a considerable quantity of nitrate of silver. This must be re-

covered from time to time, and reduced to the metallic state. For this purpose the silver may be precipitated directly by means of a plate of copper immersed in the solution of nitrate. This plan is, however, objectionable, because the liquid generally contains a large excess of nitric acid, which generates nitrous vapour, in contact with copper, and also because of the cost of copper, and the consequent necessity of saving the cuperous liquid, and crystallising the nitrate of copper. Moreover, it is not so easy to obtain pure silver by this method as by reduction with zinc.

For this purpose the silver is in the first place to be precipitated in the state of chloride by adding hydrochloric acid to the solution of nitrate, until no further precipitate or milkiness is produced. This precipitate of chloride of silver, being very dense, may be washed by decantation while kept from the light. When it is thoroughly washed, sulphuric acid is added to the liquid containing the chloride, enough to render it distinctly acid ; then several thick plates of zinc are plunged into the chloride, and the whole is left for twelve or more hours, until the whole mass of the precipitate has acquired a kind of olive green colour, and when rubbed with the nail on paper, presents metallic lustre. This is the metallic silver resulting from the reduction of the chloride. The chemical change is simply a transfer of the chloride from the silver to the zinc, the products being metallic silver and chloride of zinc. This process is remarkable as a striking exception to the general rule that chemical action does not take place between solids. The sulphuric acid may, however, be the carrier of zinc, in a liquid state as sulphate of zinc to the chloride of silver, though this does not seem to be the case from the rapidity with which the reduction of the chloride takes place. The moment the zinc plate touches the chloride, a black line appears at the place of contact, and when the zinc plate is left quite undisturbed—which is essential to the reduction—this black line gradually widens, extending like a shadow, over the surface of the entire mass of chloride. When this change of colour has been completed, the mass should be carefully turned over by the zinc plates without, however, being stirred about ; and if any patches of unreduced white chloride are found to remain, it is only necessary to thrust one of the zinc plates into the midst of them and allow a little longer time for the reduction to be completed. As soon as that is the case, the zinc plates are withdrawn, and the spongy precipitate of silver, washed by decantation, until every trace of chloride of zinc is removed. It is best to use boiling water for this purpose, as it

makes the silver more coherent and facilitates its deposition. Care must be taken also, in drawing off the washing water, that the fine particles of silver are not washed away. A very large loss may be incurred in this way. When the silver is washed it should be thoroughly dried in a hot air closet, mixed with a little nitre and borax and melted.

Materials containing filings or scraps of gold and silver, are best worked by melting them with litharge, carbonate of potash or soda and charcoal. The proportions must be regulated according to the nature of the materials from which the gold is to be separated, and the probable amount of gold; the object being to reduce enough lead from the litharge to dissolve out the gold from the substances with which it is mixed, so that while they are melted by the joint action of the heat and alkali, this alloy of lead and gold sinks to the bottom and collects together in one mass or button, which is taken from the crucible by breaking it after it has become cold. By cupellation the lead in this button is separated, and if it also contains silver, or if it is desired to refine the gold with nitric acid, sufficient silver is to be added during the cupellation, for making up the proportions of two or three times as much silver as gold. The button of gold and silver thus obtained is worked in the usual manner as above described.

EXTRACTS FROM DENTAL PERIODICALS.

CHLOROFORM IN OPERATIONS.

The annexed communication, from Dr. James Arnot, has recently appeared in the columns of the *Medical Circular*:—

"Although I do not think that the question respecting chloroform can be settled otherwise than by a large collection of facts bearing on it, there may be an advantage in correcting the erroneous impressions which are apt to be made by the incorrect statements and opinions of parties, who, for some reason or other, are deemed authorities on the subject.

Amongst the numerous letters on etherisation which have lately appeared in the *Medical Circular*, there is one signed "J. S.," informing us that its writer has been in the habit of attending the operating theatre of King's College Hospital during the last ten years; that it has been the constant practice there to give chloroform in such

minor operations, as the evulsion of the toe-nails and the ligature of nævi. Such an employment of chloroform forms a strange contrast to the fact, likewise mentioned in the course of this controversy, that several large provincial hospitals have nearly abandoned the use of it in operations of every description; and it is strangely inconsistent with a truth—acknowledged as an abstract proposition by every one, that life should not be endangered without sufficient cause. The saving a slight transient pain cannot, surely, be deemed such a cause, particularly if this saving can be as completely effected by local means perfectly devoid of danger.

In the last number of the *Medical Circular*, Dr. Kidd refers to an explanation by Mr. Stanley, of the greater mortality from operations since the introduction of chloroform. But, although it may sometimes happen, that, from our being in possession of anæsthetics, worse cases may now be operated upon than formerly, it cannot be denied that the cases are generally much more favourable, in consequence of the patient's consenting sooner to an operation which is unattended with pain; yet, notwithstanding this advantage, I have shewn, by *all* the statistical returns of operations which have been published, that the mortality after amputations exceeds the former rate by more than ten per cent.; and that from lithotomy on the adult by more than twenty per cent. These averages are drawn from a collection of the returns of four London and fourteen provincial hospitals; and when the returns from individual hospitals differ materially from this average, the difference can always be accounted for by the recent enlargement of the hospital, or the improvement of its ventilation, &c. As a full exposition of the cause of this increased mortality has been given in a pamphlet, which was noticed in the *Medical Circular* of the 12th instant, I will not refer to it further than by expressing my conviction that no point in practical medicine has been more clearly demonstrated.

Another point in this controversy is the number of those who have perished from the immediate effects of chloroform, in contradistinction to its ulterior effects. A list of such deaths has been published, which, even were its accuracy conceded, would be numerous enough to prevent the humane or conscientious surgeon from employing this agent on trifling occasions. But, that this list is very far from being complete will hardly now be disputed. A surgeon of Lyons (Professor Berrier) has lately stated, that five sudden deaths from chloroform have, to his knowledge, taken place in that city, and

that only one has been reported—a proportion which, if applied to the whole number of reported and unreported cases in this and other countries, would probably be much nearer the truth than the list adverted to. To maintain, in the face of such evidence of its immediate and ulterior danger, that chloroform should be generally exhibited in surgical operations, and even in those of a minor description, is to maintain that the avoidance of transient pain is of more importance than the preservation of life."

CHLOROFORMIC DRUNKENNESS.

Dr. Victor de Meric, Surgeon of the *Royal Free Hospital*, of London, has communicated to *l'Union Médicale*, a very curious case of *Chloroformic Drunkenness.*

An apothecary, originally strong and of sound constitution, was attacked some six years since with an inflammation of the intestines. During this illness he made frequent use of morphia, and accustomed himself so much to the action of that drug, that after his recovery he employed it in vain to relieve himself from want of sleeep. He then resolved to substitute chloroform, and either from his having procured sleep, or having had agreeable dreams, he assumed the habit of using chloroform; he spent whole days, and especially nights, under the influence of that agent.

But his constitution was soon impaired by the action of that anesthetic: his features were discomposed; his ways strange; his moral qualities were likewise attacked. It is thought that he addicted himself for five years to drunkenness from chloroform. He remained in bed till twelve or one o'clock, repeating the inhalations as soon as he awoke. He thus consumed nearly a pound of chloroform every five or six days.

On the 8th of August, about ten o'clock in the evening, returning home by the railway, after having made a purchase of chloroform, he perceived, probably on rousing himself from a state of drowsiness induced by chloroform, that the train was leaving the station at which he intended to get out; he opened the door and jumped out so unfortunately that the wheels of the carriage crushed both his legs. He was found lying on the line, endeavouring to calm his excruciating pains by inhaling chloroform.

Conveyed to the hospital, he had to undergo the amputation of both limbs. He was in an extreme state of weakness, and notwith-

standing the habit he had contracted, of using chloroform, it was not found difficult to lull him to sleep for both operations.

The patient constantly shewed himself insensible to morphia, half a grain of which was administered every two hours after the dressing. They were obliged to yield to his entreaties and allow him to inhale chloroform. He lived forty-two hours after the operation, and made a constant use, under the inspection of the house-surgeon, of inhalations of chloroform at short intervals. He languished and died in a complete state of exhaustion, and decomposition took place with frightful rapidity. *Journal of Practical Medicine and Surgery.*

REMARKS UPON THE TEETH OF THE NATIVES OF INDIA.

The following very interesting remarks upon the teeth of the inhabitants of India, are from the pen of one who spent a number of years in that country; observing minutely the manners, customs, and habits of that people. They use very little animal food, and cleanse their teeth often, a number of times each day, and the result is that they almost uniformly have sound healthy teeth.

Statistics of the conditions and peculiarities of the teeth of different nations are very interesting, as they indicate to a very considerable extent the influence of habits, different kinds of food, and manner of living, upon the teeth.

We hope any of our readers who may come in contact with travellers or missionaries from foreign countries, will endeavour to elicit from them facts and statistics, in regard to the teeth of those to whom they have had access.

Like most travellers in India, I was struck with the glittering whiteness, and admirable preservation of the teeth of the natives. Rarely, if ever, did I remark a mouth disfigured by a disgusting array of black and decayed teeth and stumps, such as so frequently, in our own enlightened land, offends in more ways than one the sense of the dental surgeon. This peculiar ivory-like whiteness, is no doubt, as in the case of the negro, in some degree due to the effect of the contrast with the dusky pair of lips, through the parting of which, in smiling or conversation, they suddenly gleam. But it is no doubt in a great measure to be accounted for by the fact, that a daily and scrupulous cleaning of the teeth, in common with frequent ablutions of the whole person, is enjoined upon them by their religion, as a duty of the

utmost sacredness. I do not remember how often in the course of the day this is required, but I am safe in saying at least twice, namely, just before or after the ordinary morning and evening meal. You may be sure they do not accomplish this important operation by means of the cheap, but admirable brushes, with which we are furnished by the ingenious hand of a polished civilization. Indeed, as these are made of the bristles of the hog, in their eyes, the most unclean of all animals, the very touch of an American tooth-brush would be utter pollution to a Hindoo, and by destroying his caste, entail upon him the most horrible consequences. But he finds upon every shrub and tree a very simple and efficacious substitute. Cutting off a tender slip with the knife or little hatchet, he invariably carries as an essential part of his personal outfit, he chews the end until he has thoroughly separated the woody fibres, and then applies it to his teeth with a rigour and a patience that might shame many an individual with greater pretensions to cleanliness. The result of this simple process is the fine polish, which so excites the traveller's admiration. An exception must be made to this remark, in behalf of a large class in the lower provinces of India, who are addicted to the habitual chewing of the betel nut, the effect of which is, for the time, to dye the teeth and gums a brilliant scarlet. I have been told that this custom, though attended with this disagreeable discoloration, conduces to the healthy condition of both.

Never having made the subject a matter of close investigation, I am not entirely sure how far the teeth of the natives of India, excel those of Europeans or Americans, in the particulars of evenness and regularity, but my strong impression is, that the former would be decidedly gainers by a comparison.

It would, perhaps, be proper to remark, that the Hindoos are restricted by their religion to a vegetable diet. Whether this has any bearing upon the facts that I have stated, I leave to be decided by the profession.

I may venture to say, however, that my observations on this subject in India, have led me to conclude that sugar, whether in its granulated state, or in the form of candy, cannot be so injurious to teeth, as popular opinion in this country would make out. The natives of India consume it in every shape, and in quantities that would excite the utmost solicitude in the breast of an American mother, were she to see her boy guilty of a similar habitual indulgence.

In Calcutta and some other large stations in the lower provinces,

there are a number of English dentists in successful practice. In the northern and more lately occupied districts, however, I have only met with two of the profession, and I have heard it rumoured, that their skill was miserably out of proportion with their ordinary charges. The latter were indeed so enormous, that one would find it almost as cheap to come back to this country for a new set of teeth, including the passage both ways, as to depend upon these gentlemen for their over-charged services. It is possible, that an American of enterprise and skill would find a professional visit to India a very successful adventure.

I merely add, that though in the foregoing remarks I have only mentioned the Hindoos, all that I have said is equally true of the Mahomedans, who, in this respect, although not required by their religion, have adopted the prevailing customs of the country.—*Dental Register of the West.*

ON DENTAL QUALIFICATIONS FOR DIPLOMAS.

The following remarks on this subject, called forth by the Letter annexed to them, have lately appeared in the *Lancet*:—

THE DENTAL QUESTION.

A new proposition appears to-day in another part of our columns, by which it is sought to effect a reconciliation between the opposite views of the two parties into which the dental profession is split. Nothing is more difficult to effect than a satisfactory compromise between opposing factions, who resolutely "show their teeth"—

> "Pergis pugnantia secum
> Frontibus adversis componere? non ego.

But union is so desirable in the ranks of the dental profession, and we take so great an interest in the efforts which the Members of that profession are now making firmly to establish a high standard of education and capacity, and to attain an honourable corporate existence, that we willingly open our columns to "any reasonable proposition" on the subject which emanates from a practitioner of intelligence and respectability.

PROPOSED QUALIFICATIONS AND TITLES OF DENTAL PRACTITIONERS.

To the Editor of the Lancet.

SIR,—The Members of the dental profession owe you a debt of gratitude for the very able manner in which you have made your readers acquainted with the proceedings of the two Dental Societies, in refe-

rence to the examination of candidates for a dental diploma; and especially for the good-will you have shewn them by your efforts to bring about the union of the two bodies, that their strength and influence might thereby be immeasurably increased.

To promote the same most desirable result, I beg, through the medium of the *Lancet*, to lay before the medical and dental professions a plan by which it appears to me the great object common to both societies, viz.—the elevation of dental practitioners by a recognised qualification, and the consequent protection of the public from those who are unqualified, and also the special views of each of the Societies would be attained, and all obstacles to their honourable union thereby removed.

Those who have perused your leading articles on the subject, will readily remember what these special views are—that the Odontological Society desire a union with the Royal College of Surgeons, and that the College of Dentists prefer an independent existence; that the Odontological Society wish the examination of candidates to be conducted by Royal College examiners and dental examiners conjoined, while the College of Dentists prefer the examination to be managed solely by dental practitioners.

At present, gentlemen practising dentistry, style themselves at will, surgeon-dentists, or dentists, the two designations being to them quite synonymous, and the one or the other of them preferred according to taste; and in the same number of *The British Journal of Dental Science*, Mr. Tomes appears as a dentist, and also as a surgeon-dentist —as "Surgeon-Dentist" to the Middlesex Hospital, and "Consulting Dentist" to the London Dental Dispensary. But the public generally do not regard the two designations as synonymous, and have the idea that a surgeon-dentist is a surgeon and also a dentist; and partly on these grounds I base the following propositions:—

1st. That in future, dental practitioners be styled surgeon-dentists or dentists, according to their qualification.

2nd. That the title of dentist be granted by a Dental College—formed by the union of the two existing dental bodies—after a prescribed course of study, and an examination such as may be deemed fit to prove the capabilities of candidates for undertaking the ordinary surgical and mechanical duties of the profession.

3rd. That the title of surgeon-dentist be granted by the Dental College to any licentiate or member of a College of Surgeons

who passes the same examination as that conferring the title of dentist.

4th. That any one having the title of dentist from the Dental College be permitted to style himself surgeon-dentist, should he subsequently become a licentiate or member of a College of Surgeons.

5th. That all the Members of the Odontological Society and the College of Dentists be entitled, on the union of the two bodies, to style themselves surgeon-dentists.

Such, Mr. Editor, are the heads of a plan which will, I hope, be favourably received by the dental profession; for it seems to me calculated to satisfy the requirements of all parties—the public, dental practitioners, and the medical profession. The public would have a solid foundation for their belief respecting the qualifications of dentists and surgeon-dentists. The two dental societies would obtain their mutual and also their individual wishes: the College of Dentists securing entire independence, and the Odontological Society gaining all the connection with the College of Surgeons that would ever, in all probability, be accorded them by the Council of the College, who, in their reply of March 13th 1857, to the memorialists of the Society, say—"At the same time the Council entertained a strong opinion that the surgical qualification for the proposed examination in dental surgery should be the same as that required for the membership of the College;" an opinion which was not modified by the Council in subsequent communications.

The medical profession, I am very sanguine, will receive my plan favourably, as it gives an honourable place amongst dental practitioners to those of them who, possessing a surgical qualification, may desire to practice as surgeon-dentists.

Having sufficiently occupied your space already, I shall not at present point out other advantages that would, in my opinion, be likely to arise from the adoption of the foregoing proposals; but will, with your permission, take another opportunity of doing so, should they meet with a favourable reception.

I am, Sir,
Your obedient servant,

A. Stewart, F.R.C.S.E.
Surgeon Dentist.

Russel Square, May 1858.

COLLEGE OF DENTISTS.

MONTHLY MEETING, March 2, 1858.

At the Ordinary Monthly Meeting, held on the above evening,

Mr. Robinson in the Chair,

Dr. Reid's paper on the decay of the first molar having been read and discussed, as already reported:

Mr. Humby read a Paper on an Improved Bellows Blow-pipe. The following is a summary of the paper:—

Mr. Chairman and Gentlemen:—In appearing before you this evening, and introducing to your notice an improved blow-pipe, I have only one object in view, namely, the good of the members of the College, and I think I shall be able to shew you, with the aid of a few experiments, that the mouth blow-pipe may be entirely dispensed with, a thing to be desired, on account of its baneful effects on the health of those who use it. I can instance myself; I was very ill after some very heavy soldering. My medical adviser treated me for liver complaint, and gave me calomel at intervals, for three weeks. It had no good effect upon me, and it was not until I went into the country for change of air, that I regained my usual health. I then had bellows fixed to my blow-pipe, which I have used ever since, and have never had a return of the complaint.

From Dr. Harris's work, it appears that the American dentists have turned their attention to the improvement of the blow-pipe, but all their productions act in a different way to my own. They are more complicated, and it takes longer to use them to advantage; they are also more expensive. This one, on the contrary, is most economical, as it serves for a light to work by, whilst in soldering, you are using all the gas that is being consumed.

Now I will proceed to shew you the advantages this blow-pipe possesses over the mouth blow-pipe:—

1. I will melt one ounce of silver and pour it into this skillet ready for flatting, to shew its power.

2. I will explain how I make my gold plates, also soft wire for

riveting, spring wire, and a cheap and easy method of making spiral springs.

3. Making dental alloy.

4. Making solder.

5. Soldering shell teeth; your left hand being at liberty to carry your solder to any part of the plate you like.

6. You can cement your mineral teeth with the light turned down to a blue flame, without discolouring them. I have always used it for this purpose since I have had the blow-pipe.

It is proper to remark, that Mr. Humby accompanied his experiments with lucid extempore explanations; and that the blow-pipe, bellows, &c. with which he conducted his experiments were presented to the College.

At the conclusion Mr. Humby said—I hope the small effort I have made to relieve the mechanical operator from one of the most trying duties of his calling will prove successful, and that I may live to see the day when the mouth blow-pipe will be entirely discarded. I have only broken the ice, as I know there are many gentlemen here, far more skilful than I am. The blow-pipe I have had the pleasure of bringing into notice this evening, is one which will doubtless bear further improvement; and I trust, from the observations I have made, that such will be the case.

It being nearly ten o'clock before the reading of this paper was concluded, the discussion upon it was postponed until the next meeting.

MONTHLY MEETING, APRIL 6, 1858.

Mr. Matthews in the Chair.

Adjourned discussion on Mr. Humby's Paper on an Improved Bellows Blow-pipe, illustrated by experiments.

The Chairman, after stating the subject to be brought before the meeting, wished to draw the attention of the gentlemen present to the great advantages of a blow-pipe, worked by bellows, over those of the ordinary kind, where the lungs were compelled to perform a very laborious part, and which, to persons at all affected with a pulmonary complaint, was very injurious: he thought it very much to the credit of Mr. Humby, to have introduced so useful an appendage to the work-room of the dentist, and hoped that other gentlemen would act in a similar manner in introducing any improvement

or invention that might occur to them; as by that means, much information was gained, and a general good feeling established among the members of the profession.

Mr. Humby then gave the proportions for making his dental alloy, as follows:—

Gold	2 dwts.
Silver	1 oz.
Platinum	5 dwts.
Zinc	6 grs.

The silver and gold to be placed in the crucible and fused; the platinum is then to be added; and lastly, when the whole mass is completely melted, the zinc is to be added. The zinc is allowed to pass off in vapour, and the molten metal is to be poured into the mould. He also recommends quenching the ingot at a red heat in diluted sulphuric acid, as by that means he considers it is toughened or rendered more malleable.

Mr. Mackenzie spoke of a method of gilding silver plates, by means of mercurializing the surface of the silver, and then laying on gold leaf of any required thickness; the mercury next being evaporated, the gold is left soundly attached to the surface of the silver as in the operation of water gilding. He thought this method was fully as cheap, and superior to the use of dental alloy.

Mr. Hockley objected to the use of dental alloy, as he considered it was used improperly in many cases where gold ought to be employed: he preferred 16-carat gold where cheapness was an object. He also objected to the use of brass in the composition of gold solders generally.

Mr. Purland did not hold with the use of dental alloys, therefore never introduced them in his practice; but he had heard of an alloy different to that of Mr. Humby, consisting of two parts platina, and about five parts silver; the proportions might be varied, but the dearest was the best. He did not approve of the introduction of brass in gold solder.

Mr. Mackenzie considered that the best method of making gold solder, was to take a portion of the gold in use, and add one-quarter of its weight of alloy; for instance, take 20 carat French gold, where the greater part of the alloy was copper, the proportions then would be 1 dwt. 20 carat gold, and 6 grs. of silver; for English 20-carat gold, which contained more silver than the French, the proportions would be 1 dwt. 20 carat gold, 4 grs. of silver, and 2 grs.

brass, copper, or pinchbeck; for 16-carat gold the copper must be less in quantity, and the silver in greater proportion. He considered this method preferable to making the solder from fine gold, copper, and silver in certain quantities; as by proceeding in the manner he had described, the solder was sure to be of the colour and quality required. He considered the use of 16-carat gold for pins a bad plan, as it necessitated the use of a commoner kind of solder, which was weaker than the finer kind; in his own practice he never drilled his plates through for fixing the pieces, he merely drilled far enough to prevent the pin slipping, and then soldered; he found it quite secure, and saved the trouble of clearing the pin from the inside of the plate. The reason of pins coming out of dental alloy, or platinized alloys generally, was, that the solder used was much too coarse and fusible; and by running before the metal became sufficiently heated, did not thoroughly unite so as to make a sound joint: 18-carat, or fine gold used as solder for platinized alloys, would be found to obviate the inconvenience complained of, as by the extra heat necessary for its fusion, it entered more completely into the body of the metals it joined.

Mr. Humby always used 18-carat gold for pins.

Mr. Spencer had found great difficulty and uncertainty in preparing wire for spiral springs, and would like to hear some gentleman of experience speak on that subject.

Mr. Humby said he would state his method: the quantity for a single pair would be 2 dwts. fine gold, 16 grs. silver, and 8 grs. copper: it should be well forged after casting, drawing and annealing it in the usual way, and should be drawn tightly through at least six holes previous to turning it into springs.

Mr. Matthews observed, that it was necessary to be very careful not to draw the wire too swiftly through the plate, otherwise it became heated in different parts, and consequently softer in some places than in others, in which case the springs could not be good.

Mr. Bell thinks that wire ought to be drawn through *ten* holes previous to turning.

Mr. R. Thomson said he found sixteen necessary; and would be happy to shew any gentleman his method if he would call on him.

The Chairman hoped that we should soon have a perfect school of Dental Mechanics where everything pertaining to our art could be practically illustrated.

Mr. Bennett conceived that 16-carat pins were used on account of their greater strength, and not on account of their cheapness, as well

as 16-carat plate for bands, which was more elastic and harder than 18-carat; he thought, that in fixing the pins it was better to drill the holes through, by which means, it was possible to ascertain the soundness of the work, as if the solder had not run through; the right way was to turn the plate over, and draw the solder through with the flame. With regard to the making of solders, he thought it by far the better way to make them of certain known proportions; your gold always being alloyed in the same manner, the solder must of necessity always be of the proper quality. In the making of wire, he considered the flatting of the gold answered the same purpose as forging; indeed, as far as his experience had taught him, he thought the flatting preferable to forging; and thought, also, that large quantities of gold cast and flattened made better wire than small quantities cast in a wire ingot mould. In alloying gold, he preferred melting the gold and silver first, and then throwing in the copper; as by that means, oxidation of the copper was avoided.

Mr. Cunningham (a visitor) had used platinized gold for pins, and found them superior to anything else.

Mr. Jordan then introduced another modification of the blow-pipe, to be used either with the mouth or bellows; the improvement over that introduced by Mr. Humby was an ingenious but simple contrivance for varying the distance of the blow-pipe from the flame, by which means a soft and enveloping flame, or a pointed flame could be produced at will. Mr. Jordan exhibited its effects to the meeting, which were highly approved of. Mr. Humby and Mr. Jordan presented their improved blow-pipe to the College.

The Chairman, in closing the adjourned discussion, said, that they had had a most interesting, pleasant, and useful discussion; that the members must feel greatly obliged to Messrs. Humby and Jordan in coming forward with their information, as well as for the present they had each made to the College; and he hoped that their example would be followed by many others, as it was not only the information brought forward by gentlemen who volunteered to read papers on different subjects, but the vast amount of interesting matter elicited in the discussions of the papers so read: he was fully aware of the diffidence felt by some gentlemen in coming forward publicly to give opinions or information on different subjects connected with our art, but he hoped that diffidence would be overcome, and that many other gentlemen would come forward on future occasions as the two gentlemen, Messrs. Humby and Jordan, had done on the present.

MONTHLY MEETING, May 4, 1858.

Mr. Matthews in the Chair.

Mr. Sidney Longhurst read the following Paper on The Merits and Demerits of Congelation in Dental Operations :—

Mr. Chairman and Gentlemen :—The object of this paper is to lay before the profession, a clear and concise exposition of the real value of Congelation in Dental Operations : *i. e.*, the extraction of teeth, &c. under the benumbing influence of intense cold.

For about five years the subject has received a considerable share of attention ; during which time, opinions of the most conflicting nature have been current ; *par. examp :* a patient wishes to have a tooth extracted—he dreads the pain, and he dreads chloroform. He hears of Congelation from a friend who is verbose in its praise, and who urges him to try it. He resolves. He, perchance, meets a second, to whom he intimates his intention, but is now told, that if he desires to pay twice the ordinary fee—to be fifteen minutes instead of as many seconds in the dentist hands, and suffer the usual amount of pain, he should by all means go ! He consequently deems it desirable to obtain the opinion of his surgeon. That gentleman probably informs him, that he has heard much of it, but has had no ocular, or other proof of its efficacy in the matter, but desires him to consult his dentist. The dentist also, perhaps, frankly admits his personal inexperience, or expresses his doubts, or at once stigmatises it as a tissue of charlatanry. In this dilemma, he resolves upon trying it, possibly comforting himself that it cannot, at the least, be worse, or, being at a dentist's, summons courage, and the tooth is removed.

It is, in such cases, and which are constantly occurring, that it is hoped this paper may be of service. The dentist or surgeon, though hitherto wholly inexperienced in the matter, may confidently recommend or deter their patients according to the case, and may judge with what appropriateness and truth, the extraction, &c. of teeth by congelation may be termed " painless."

What I shall here assert, is not vaunted before you, based on mere reading or vague hypothesis, but inferences drawn from actual practice ; not from a few isolated experimental cases, but some hundreds, all of which I carefully watched, and accurately noted. The congealing process effected with no self-contrived appliance, but with

the most efficient apparatus for the purpose yet constructed, known as "Blundell's Patent."

I am perfectly aware that the opinions set forth, will be found strangely at variance with those of previous authors, who may not be tardy with their replies and hostile criticisms. These I fear little, and shall heed less; in full confidence that, if they restrict themselves to a truthful representation of *facts*, fairly deducted from their entire practices, not sounding loudly a few successful cases, and carefully consigning the rest to oblivion, their experience will tend only to corroborate my own.

To produce congelation, in order to alleviate the pain of an operation, or to congeal and render a part insensitive, for the purpose of obtaining the anæsthetic property of cold, a frigorific agent, or mixture, must be brought in contact with the part to be so benumbed. This, for dental purposes, is most conveniently brought about, by passing a stream of fluid filtered from a freezing mixture, (composed simply of ice and salt) over the tooth and gums to be benumbed. A stream at 5° below Zero, (37° lower than the temperature necessary to freeze water,) is thus readily produced. It will be obvious, that the shock of a current of such intensity, passing directly over the tooth, would be productive of pain of no ordinary nature. This, in the majority of cases is overcome, by allowing the stream at first to flow over the tooth at about 98°, the normal temperature of the mouth, by which a sensation of agreeable warmth is experienced. This is gradually reduced to from about 15°. 10°, or 5° above Zero, according to the temperature of the season, apartment, or length of tubing the fluid has to traverse from the resovoir to the mouth; the greater the distance, the greater the loss.

The apparatus for the purpose, for the construction of which we are indebted to Mr. Thornthwaite, of Newgate Street, but for the idea of the applicability of congelation to dental purposes, to Mr. Blundell is this:—A gutta percha reservoir, capable of containing three or four gallons, furnished with a perforated cylinder in its centre, is filled with finely planed ice and salt, two parts to one. Communicating with this resovoir, so charged by a tube and stop-cock, is a smaller vessel, of a size sufficient to hold about fifteen fluid ounces of water at 98°. To this a few feet of flexible tubing is attached, communicating with a waste vessel. This tubing, at a suitable distance, is divided, and in each end, a small ivory pipe, four inches long, is introduced. These pipes are again connected by a tube of about an inch in dia-

meter, and two in length, of the finest india rubber, thin to transparency. A pipe is placed on each side of the gum of the doomed tooth, and the loose india rubber membrane is allowed to hang over it. The stop-cock is now turned. The freezing fluid passes from the reservoir, and enters the small vessel of warm water, which it gradually mingles with, and displaces. The warm fluid is first forced out and along the flexible tube, and first ivory pipe, inflates the thin membrane, which as it expands, closely adapts itself to the gums and tooth, escapes by the second pipe, and remainder of the tubing, into the waste vessel, or may be carried entirely away.

A small thermometer, the bulb of which dips into the interior of the tube through which the fluid passes from the graduator to the mouth, registers accurately the power of the agent employed.

It will be readily seen, that as the warm water is displaced by the greater density and volume of fluid from above, the temperature of the stream which passes from thence, and traverses the delicate membrane over the tooth, will be slowly and regularly lowered in temperature.

The time occupied in producing the anæsthetic effect by this method, is from six, to about ten minutes; depending entirely, as I shall hereafter show, for the success or failure of the whole, on the size, description, and position of the tooth, and constitution of the patient. A much shorter time has been stated to suffice, but like too many other reports which have been circulated respecting it, is unworthy of credence, and requires but little practice to refute.

The temperature of the freezing mixture will of course greatly influence the length, or brevity of the procedure. It is difficult, with the best apparatus and management, to get a stream traversing the membrane in the mouth at a temperature lower than 5° above Zero, although the mixture in the reservoir may stand at 5° below. Ten or fifteen degrees are generally lost in the transit, though the tubes, &c. be of the best non-conducting materials.

It is easy to obtain frigorific mixtures of twice, or thrice the intensity, but for all practical purposes the above will be found the most efficient.

A current, the temperature of which is higher than 16° or 20° should never be employed. The expenditure of time it would involve, and the trifling anæsthetic effect produced would be inadequate indeed.

Notwithstanding the care in graduating the temperature of the

stream, while passing over the tooth and gums, this part of the process is by no means always *painless*. Most heed it but little, but to a few it is almost insupportable; it is to all far from being agreeable. The sensation of pain, or otherwise, is due to the development of the enamel. Teeth, the crowns of which are traversed by deep pits, and fissures, are the most sensative; those, in fact, which are the more readily "set on edge" by cold water, acid fruits, &c. It is not always the diseased tooth to which the cold is directly applied, that occasions the suffering, but frequently those adjacent.

That part of the mouth only is subject to the congealing process which immediately surrounds the offending tooth. The investing gums in contact with the current assume the appearance of white wax. In this state the tooth is quickly extracted. Blood, as usual, flows freely from the wound; the gums immediately resume their natural colour, but the sensation of numbness continues for some minutes. Too rapid return of the circulation is, in a measure, prevented by the use of iced water.

On the second or third day after the operation, the gums recently congealed become pale, white, and sore. The epithelium peels off, and becomes again healthy. More than this need never be apprehended, if the refrigoration be not carried too far.

The amount of pain abolished by this procedure differs greatly, as I have before stated, in different teeth, and different subjects. This, to those who may be inclined to argue "a tooth is a tooth," may seem paradoxical; but will cease to be so when it is remembered, that anæsthesia by congelation is purely local, not general as is chloroform. That anæsthesia by congelation is not absolute, as is chloroform, but in the smallest number of cases, such as small teeth, stumps, &c., those, in short, which would cause but little suffering, if extracted in the ordinary way. That of the sixteen pairs of teeth in the human jaws, there are no two exactly alike, all differing, more or less, in size, shape, or number of fangs. It is therefore obvious, that a tooth with three roots will be productive of more pain in its removal than a tooth with one—a tooth with a long thick fang, than one with a short small one; the pain inflicted being in almost an exact ratio to the amount of physical force necessary to extract it.

The position, articulation, and greater density of the bone of the lower jaw, render the success of congelation in the removal of lower teeth much less certain than upper. It is of great importance that, during the refrigoration, the mouth should be kept dry. All moisture

coming in contact with the membrane is converted into ice; even the breath, condensing upon it, assumes the appearance of hoar frost. The saliva, gravitating to the lower part of the mouth, insinuates itself between the membrane and tooth, and there freezes, forming over it a complete capsule and shield of ice. Ice usually being but 32° (a temperature almost useless for anæsthesia), and a bad conductor, the tooth and gums will often remain at that temperature, uninfluenced by the more intense cold passing through the membrane above. The effect in such cases is often a mere bagatelle. The quantity of saliva secreted by different individuals differs greatly. In some it is easily absorbed by placing small napkins over the ducts, or with a syphon; in other it will defy our best efforts. With the upper teeth we are not so troubled.

The constitution of the patient is next for consideration. I need scarcely remark, that insensitiveness of a part produced by congelation, is effected by causing a contraction of its vessels, and a consequent expulsion of its blood. The more nervous and vascular the part, the more sensitive and susceptible of pain. The pale anæmic child feels not pain so acutely as does his ruddy companion of the same age. Mercifully is it so ordained: his are the broader shoulders who carries the heavy burden. I would here quote Dr. Branch, of America, one of the few of any experience who has written at all impartially on this subject; he writes :—

"It is like all agents coming from God's hand direct, most powerful and most useful where most needed, viz.—enfeebled and nervous constitutions; while the robust and hardy resist its action with a tenacity which sometimes renders it almost a nullity." It will be seen then, that the paler and more enervated the patient, the fitter subject for congelation.

Of about three hundred cases in which I have operated with congelation, I have had but two cases of large firm grinding teeth, of which I can assert, on the statements of the patients, there was literally no pain. These were both upper wisdom teeth, teeth which every dentist knows, are more easily removed than any of the large molars. In both cases the cold was continued an unusually long time; the consequence was, that in one the wound was more difficult and troubleseme to heal than any other I have seen.

The following cases may tend for illustration :—Two maiden ladies, introduced by Dr. Arnott, called to have teeth removed by con-congelation. The first—two apparently firm teeth, but from which

the gums and alveoli had absorbed, allowing them to be easily extracted: the case of course gave great satisfaction. The second lady wished to lose three, two of which were scarcely more than attached by the gums—the third, a lower bicuspid, was alone firm. The two first, as may be imagined, were scarcely known to be out—the third she remarked was "rather sharp." This, to the ladies, was considered the perfection of congelation, and elicited a most eulogistic letter to Dr. Arnott on the subject. That gentleman, a few days after, sent a third patient, a young lady of about fourteen years of age, from whom it was desirable to extract three of the large permanent molars, all hopelessly decayed. A painless operation had been promised her. Congelation was applied to the first, and I quickly extracted it, but not before the usual sharp cry had echoed through the apartment. This lady, doubtless, returned to Dr. Arnott, with experience strangely contradictory to that of the former patients. The cause may be briefly told. The teeth of the first were those which nature herself was endeavouring to expel, and would soon have accomplished. The last was that of a ruddy healthy girl, with teeth firmly implanted, to bear the wear and tear of three score years."

The following is also a case of singular significance:—A lady was brought by the late Dr. Edwards for the removal of a tooth. The doctor himself being dubious as to the efficacy of the agent for the purpose – the lady equally so. Dr. Edwards requested they might be permitted first to witness an operation. The request was granted. A patient, a robust servant girl, was found, with a troublesome tooth—a second lower molar. Congelation was produced in their presence, and the tooth extracted; but the cry it elicited was all potent in preventing the lady from becoming herself a patient.

From these cases it may be inferred that congelation is useless. Such an impression I should be sorry to give; but that in many cases it is useless—nay more, that in a few cases it is even worse than useless, I hesitate not to affirm. For the robust and vigorous to use it for the extraction of a tooth, I consider it an idle farce; for the weak and shattered invalid, a grateful boon.

In *all* cases of extraction, an *alleviation* of the ordinary pain may be confidently promised and expected. When I say, that in a few cases it is useless, and worse than useless, I infer that the amount of pain abrogated in some instances is so trivial, as to be quite inadequate to the extra inconvenience, disappointment, expense, and sacrifice of time.

The cases in which congelation is found of most value, are these of ordinary stump extraction. The universal repugnance attending it, its constant occurrence, and the facility with which it is usually performed, tend to cover many defects. Much less time is required for the congealing—until the gums are blanched will generally suffice. Many roots, when approximating, may be readily extracted with one freezing. I have often removed four or five with little or no pain. When deeply seated, a more lengthened application will be necessitated.

There is, however, one class of stumps, for the mitigation of pain in the extraction of which, congelation will be found to play but a sorry part. It is the fangs of the large molar teeth, the crowns of which have been recently fractured in their attempted removal. Such cases are among the most difficult the dentist has to perform, and in which both patient and operator will find congelation but a miserable helpmate.

Of the merits of this agent in the operation of "pivoting," I would willingly pass over; the title of my paper, however, precludes it. Having had no actual experience in it, in that operation individually, in consequence of patients for congelation always preferring the entire removal of the tooth, an incisor being productive of so little pain, rather than risk the success of a painless excision and pivoting; a success which, from my other experience, I should be unwilling for my own sake to promise, and for my patient's to risk—my evidence can be but circumstantial: that evidence, however, would at once condemn it without qualification. Its commendation for this purpose by other writers, after witnessing the absurd way in which its value in tooth extraction has been lauded and exaggerated, I am sorry to add, has not the slightest weight with me. One case of its use in pivoting, and its utter inapplicability and failure, I received through a channel, the veracity of which excludes a doubt. Physiology, that glittering shield, under which its imperfections in practice have vainly sought shelter, here forsakes it. It has been often answered to the pertinent query—"Why is not frostbite of the gums produced by the application of such intense cold?" Because the blood-vessels are relieved from congestive reaction, by being cut across, or lacerated in the operation." In pivoting, there is no cutting or laceration of the gums, and frostbite is, and was the result in the case alluded to. Some attribute exemption from frostbite to the use of iced water after

the operation, thereby graduating the return of the circulation. The theory is good, and may be humoured, but the effect trivial.

The use of congelation in the staphylorophy has been occasionally attempted, but so far as the results have come to my knowledge, they have been unsatisfactory. Of a case operated on by W. Field, of Brighton, he speaks thus:—

"I tried, with the assistance of some medical friends, to produce congelation of the palate, by means of pounded ice and salt; but in this we totally failed, even after more than an hour's perseverance. Our failure is attributable, I suppose, to the naturally high temperature of the parts, and the currents of warm air through the mouth and nose, to both of which the freezing mixture would be exposed. Had we succeeded, the advantages to be gained are evident, as all pain would have been saved to the patient during an operation, which might have been accomplished in a very short time, and no interruption would have been occasioned by bleeding."

So far as the failure in producing congelation is concerned, I attribute it solely to the method I imagine was adopted—that of applying small bags of ice and salt, one after the other, to the palate. With the apparatus, as described at the beginning of this paper, congelation of the palate is easily effected; but of the advantages to be derived in the operation in question, I am not so sanguine. A next to painless operation might undoubtedly be anticipated; but that most dreaded result in staphylorophy, sloughing, would certainly be more liable to supervene.

The reported efficacy of this agent in curing toothache, and plugging teeth, is lastly for consideration. Here, again, we unfortunately find Physiology and Congelation pitted against each other. Toothache may be attributed, in the majority of cases, to a morbid enlargement of the dental pulp and fibrils, causing a pressure on the osseous non-elastic walls; or extraneous matter in the cavity of the tooth setting up irritation. When cold is applied, the inflamed vessels contract, and the pain ceases. But the result of all severe cold is violent reaction—inflammation. The pulp on the removal of the cold swells as before, the pressure is renewed, and the pain returns as badly, or worse, than before.

The same objection exists, but in a less degree, to cold in stopping teeth: unless the exposed nerve and fibrils are actually cut across and destroyed while the tooth is cold, the same results will accrue. It is possible that, with the most careful management, congelation may in

some cases be made of trifling value, in the hands of those who possess willing patients, and time to expend over it. Those who have never used it for this purpose have little to regret.

A comparison has often been made between chloroform and congelation in the extraction of teeth : A comparison which, regarding them purely as anæsthetics, is about as idle as one would be between the sun and moon as luminaries! With chloroform we have no crochets as to the size, form, position, etc.: one tooth, or all, can be removed equally, and absolutely painlessly. Let it not be inferred that I would use, or recommend chloroform indiscriminately. Few are more keenly alive to the gloomy fact, that an awful casualty may happen to any one, at any moment, without a murmur of warning. From this, at least, congelation is exempt.

It has been a very general impression, that the intense cold applied to the tooth to be removed, and always operating more or less upon the neighbouring teeth, must have a prejudicial effect on them. Throughout all ages, the opinion that extreme cold influences the teeth injuriously has had credence.

We find Hippocrates writing :—" Frigidum inimicum ossibus dentibus nervis cerebro spinati-medulæ : calidum varo utile." My own observations, however, tend to add but little weight to such testimony. I do not go the length of the assertion of many, that such intense cold is perfectly harmless. I am inclined to regard all extremes as preternatural, and, consequently bad, unless used therapeutically to a part already morbidly affected. Nevertheless, I must in all fairness add, I have never once found the adjoining teeth which have been unavoidably partly frozen, to suffer in consequence.

I attribute the pain in the teeth on the application of cold, to a cause diametricaly opposed to that, to which ordinary toothache is attributable. The one, as I have had occasion to remark, is usually due to the swelling of the vascular contents of the tooth upon its unyielding walls. In the case of its production in a healthy tooth by cold, to the contraction of the walls upon their contents, a circumstance, which may in a measure be avoided, by capping the approximate teeth with wax, or gutta percha. Teeth, the crowns of which are deeply pitted and furrowed, are sooner and more painfully influenced, from the fact of the cold more readily gaining access to the sensitive structure beneath the enamel, without being subjected to the graduation necessitated, when the cold is applied to a tooth, the

enamel of which is solid and impervious. The enamel being insensitive, acts as a natural graduator.

I have operated with this agent at various times, before Drs. Arnott, Druitt, Hansom, Edwards, Ransom, Pett, Branfoot, Laurence, and other gentlemen, who have felt interested in the matter, at all times with varied success, according to the triviality or difficulty of the case. By some, of course, it was justly eulogised, by others—as deservedly condemned.

I have now, to the best of my ability, laid the subject before you in its bare reality. I have withheld nothing, for or against. I have shewed it you in its brightest, and its dullest colours—its fairest, and its ugliest aspects; and it is only my regret, both for ourselves and our patients, that its "merits," and its "demerits," are not more evenly balanced.

DISCUSSION.

Mr. Mackenzie had not, himself, had experience in congelation, but he had witnessed, after-effects of an unsatisfactory nature, where it had been employed. He instanced a case in which a lady had been operated upon for the removal of one tooth which had been extracted without pain; she was seized, however, with such violent pain in the adjoining teeth, a few hours afterwards, that two other teeth had to be removed: the probability was, that if congelation had not been employed at all, she would have only lost one tooth instead of three. In this case, he supposed the congealing process emptied the vessels, which would naturally collapse, and that they could not regain their natural state. Mr. Mackenzie objected to congelation as likely to injure sound adjoining teeth.

Mr. Longhurst had never seen a case of the kind. The epithelium always peels off, but the parts soon resume their natural appearance.

Mr. Rymer asked whether the hemorrhage was not great after the extraction of teeth with congelation.

Mr. Longhurst.—Not at all. Much the same as under ordinary circumstances; indeed, in many cases there is less bleeding.

Mr. Rymer did not hold with congelation or chloroform, except in cases where the patients were of so nervous a temperament as to render the employment of one of these agents absolutely necessary. As, for instance, where health, or life itself was endangered through

timidity of the operation of extraction, an operation generally very simple, although care was always necessary in its performance.

The Chairman, having asked whether any other gentleman wished to address the meeting, and no one rising, said, that the whole subject had been so ably, impartially, and fully handled by the author, that little remained to be said upon it; he was sure that all had listened to the paper read by Mr. Longhurst with much interest, and he had great pleasure in proposing a vote of thanks to that gentleman for bringing the subject before them. The vote of thanks was carried by acclamation.

Mr. Freeman, of Waterford, rose and expressed the pleasure he felt at meeting so many of his brother practitioners in the metropolis. He could assure the meeting, that the good the College was doing in the profession was fully felt and appreciated in Ireland.

The meeting was adjourned to Tuesday, June 1st.

GENERAL MEETING OF MEMBERS,

Held on Friday, May 21, 1858.

This Meeting was convened for the purpose of electing a President, and filling up vacancies in the Council, as recommended in the report of the Committee. Peter Matthews, Esq. in the Chair.

The Chairman opened the proceedings by saying, that the first business would be the appointment of scrutineers for the ballot which was then open for votes.

Mr. C. J. Fox rose, and entered a protest against the business for which the meeting had been summoned, being proceeded with, for reasons which are embodied in the resolution he held in his hand, and which he would read.

The resolution was then read, and handed in to the Chairman, when

Mr. Sass rose and seconded it.

The Chairman said, he hardly thought that the meeting would consider that resolution previous to proceeding with the business of the day. There was a general meeting called last time for general purposes, coupled with the business of nominating a Committee of the Council. He had called them together on the present occasion, to do that which they did not do at the last meeting; therefore, the first business would be the appointment of scrutineers.

Mr. Fox said, that he should put his resolution to the vote.

A Member replied, that his resolution had been disposed of at a previous meeting, and he could not put it again.

Another Member rose to move an amendment, having for its object, the disposal of Mr. Fox's opposition and interruption of the business of the evening.

Several Members also intimated to Mr. Fox, that he was quite out of order, and must permit business to be proceeded with in the usual way.

A conversation ensued upon the point, when

The Chairman interfered, and said, there was no occasion for an amendment, as the proceedings were being conducted in a regular legal manner, and might go on.

Mr. Turner and Mr. Spencer were appointed scrutineers for the purpose of examining the ballot at the close of the poll. Some further matters of a conversational character were alluded to, and, having been disposed of—

The Chairman said, that from the turn which affairs had taken, he thought he was bound, in justice, to make some statement to the Meeting. The Members would see, from the report of the Committee, which had been furnished to them, that they were assembled to perform a duty which had been customary at a certain time during the season; but from circumstances with which they were already familiar, it had been in abeyance until the present period. This general meeting had been called to elect office bearers, and a Committee had been appointed by the Members, to fill up the vacancies in those offices; that Committee had proceeded with their labours, and those had been of a very arduous character. Since the last meeting, he felt, as one of the office bearers, particularly anxious about the position of the College, and had waited upon some highly respectable gentlemen to see if he could not get them to fill the vacant offices; he had laboured very hard, and he begged to state, that what he had done, was quite independent of the Council, not one single Member of which was responsible for what he did in his position as their Treasurer, and with the view of doing his utmost for the permanent benefit of the College. (*Hear, hear*). If, therefore, there was any odium attaching to what had been done, he would willingly bear it, for he alone was accountable. (*Applause*). He also wrote to many gentlemen about the office of President, and also to see if there could be satisfactorily brought about that amalgamation which was so much desired; he had re-

ceived very kind letters from all of them, and one or two gentlemen wrote to say, that unless there was a probability of the amalgamation of the two Societies taking place, they would rather decline the honour; consequently, the action of the Council had been greatly hindered. Under these circumstances, he thought it his duty to wait upon Mr. Cartwright, which he did, and had an audience of an hour. He stated to that gentleman the purport of his visit, and asked whether it was not possible, (the delegates having failed) that some terms could be obtained, so as to carry the matter out to a successful termition. He talked it over with Mr. Cartwright very seriously, and he then found that they seemed to have been very much misunderstood by the Odontological Society. It appeared, that the Council of that body, never consulted their members at all about the amalgamation. Let the meeting compare the Odontological Society with the College of Dentists, and they would find the one to be entirely close and irresponsible for its actions to its members, whilst the other, (the College) was open in all its transactions (*Hear, hear.*) The members of the first-named Society had considered that their Council alone had settled the question. In the first place the College of Dentists appealed to the public at large, all its proceedings having been made public, and secondly, it was obliged to appeal to its members; the Council, therefore, could not attempt to carry things with a high hand, such as was intimated ought to be the case from another quarter (*Hear, hear.*) It was stated in the Journal, and elsewhere, that the question had never been argued, but he, (the Chairman), assured them that no power had been allowed them to argue it; but they had been told that the propositions must not be taken seriatim, but as a whole, and swallowed as a whole without any argument at all. He need hardly tell that meeting that there was no Englishman—that there was no Irishman—that there was no Scotchman who would take that question without mature consideration, (*Hear, hear.*) Such was the practice of the House of Commons, which to a certain extent guided the College, as it did other deliberative assemblies, (*Hear, hear.*) He further stated what were the feelings of the College, and that the Members would be very happy to give way on many particulars, but that they would not like to lose the prestige attaching to the name of the College of Dentists. Many Members, especially those who resided in distant parts of the country, had held themselves out to the public by their connection with the College, and had also placed their names on their professional cards, as Members of the College of Den-

tists, so that any alteration in name, of a serious character, would be attended with extreme inconvenience to them, and that such Members certainly did not like to give up the name of the College. (*Hear, hear*). The Chairman stated, that he would have to consult his colleagues of the College, in Council, and would leave the united name to be settled afterwards; that is, if an amalgamation was effected, or that they should amalgamate immediately.

Mr. Cartwright said, that was reasonable enough, and that he too, liked the name of his society; the College of Dentists was a good name, and so was that of the Odontological Society.

He (the Chairman), replied, that if the name of the College could be retained in any way, the Members would be very happy to range themselves under the united banner. (*Hear, hear*).

He (the Chairman), had had a second audience with Mr. Cartwright, and the result of such interview was a communication to the effect, that as there were many members of the College obnoxious to the Council of the Odontological Society, there was no way open for an amalgamation unless those members were removed. He then gave Mr. Cartwright to understand, that he could go no further; for holding a high office in the College, he could not betray the trust reposed in him by assenting to such a proposition. (*Hear, hear*). He also added, that all further communications upon that subject must cease, at the same time asking him to candidly answer one or two questions which he (the Chairman) should put. He then asked Mr. Cartwright if he (the Chairman), or any one of the Council, were objectionable to the Society; because, if that were so, and they stood in the way of the proposed union, he could assure the society, that, speaking for himself and one or two Members of the Council, they would most gladly resign, and so remove all cause of obstruction. He was perfectly competent to carry out what he had stated, for, at the time he was speaking, he had the resignation of another member in his pocket. Mr. Cartwright, however, assured him that there was no Member of the Council objected to, otherwise he (the Chairman) would not be so desirous of enhancing that which all had so much at heart, namely, the amalgamation. (*Hear, hear*). The College of Surgeons having rejected the memorial of the Society, he thought it would be a very admirable plan for the Society and the College of Dentists to work in an amicable and independent manner (*Hear, hear*); he thought, if they threw open their doors to the Members of the College, the College would do the same to them, and thus a good

feeling would be established between them. (*Hear, hear*). He wished that the gentlemen of the Odontological Society could inform them of any other mode of procedure upon which, or by which this object could be carried out, other than what had been already proposed. If the College, he said, could not gain the esteem of the Society for acts done as a body, he hoped the day would soon arrive when they should do honour to the profession. (*Hear*). He repeated that the day would arrive, and before long, when the College of Dentists would be looked up to as the highest authority upon its peculiar faculty, of any in this country. The Society and the College are like two lines of an angle converging to a point; they would continue their course and meet more amicably than ever (*Hear, hear*). After his visit to Mr. Cartwright, the next thing was to get a gentleman to fill the office of President. Many would, no doubt, be glad to take it, but he wanted the best he could obtain; well, two or three gentlemen signified their willingness, when one particular individual began to take up every little petty calumny and rumour against every gentleman who offered to accept the office. Now, when he had taken the trouble to go, as well as write to gentlemen of known respectability, he thought it was too bad for parties, from an unworthy motive, to take up old stories and deter those gentlemen from coming forward. (*Hear, hear*). One gentleman had said to him—"Let him who is without sin amongst you cast the first stone." (*Hear, hear*). They had all lived long enough in the world to know that it was not so much the position as the individual that was of consequence. (*Hear, hear*). The position did not make the individual, but the individual the position; because, let him act uprightly and he would be sure to make the position. (*Hear, hear*). Who, he would ask, thought worse of the Lord Chancellor because it was known that he had been a sailor? Would any say that he was the less fit to be the Lord Chancellor on that account? (*No, no*). That because he had plied the ropes and the tiller he was not capable of sitting on the woolsack? He forsook that mode of life and succeeded in another; and the Queen had shown his fitness by rewarding him with a peerage. Would any gentleman think worse of a noble and learned lord, because the originator of the family was a fiddler? (*Hear, hear*). Let them again bear in mind the great Ferguson, who, when a shepherd boy, while tending his sheep on the hills, watched the starry heavens, and ultimately became one of the greatest astronomers of the day. (*Hear, hear*). Would the early humble

life of Ferguson take away from the honour that rested on his name? Again, they had John Bunyan—look at that man. Bunyan had said, that in the very zenith of his popularity he was never more affected than when an old woman told him one day, that she remembered the time when he was the greatest blackguard in the town. Bunyan, however, rose from that position, and became one of the most eminent and pious of men. (*Hear, hear*). He (the Chairman) mentioned these things, because there were gentlemen who affected to sneer at a man because his antecedents were not connected with pride of birth. (*Hear, hear*). He was sorry to take up the time of the meeting with these matters, but he thought it became really necessary after what had been urged against men on account of their humble antecedents. With respect to himself, if he had consulted his own feelings, he should not have been before them that evening; he had been almost tempted to resign his position, but he found they must not separate but cling together; for, unless they joined hand in hand most heartily, they could not go on to perform their duties and frustrate the designs of those who contemplated the destruction of their College. He therefore trusted, that as long as there was a hand and head, they should go on altogether to carry out those principles which they had laid down to guide them, and which would be sure to succeed. (*Hear, hear*). To return to Mr. Cartwright for a moment; he told that gentleman that the College of Dentists contained many able men, and that a united body would have been strong and powerful for the furtherance of a common interest. We have powerful working minds as well as bodies; and though the profession is split into two parties, you *must* have us at last, for you cannot go on without us. (*Hear, hear*). He had not much more to say to the meeting, except that he had done his utmost endeavour to bring about that amalgamation, which, as he had said before, was so much desired, and, perhaps, was not even then impracticable. He would not detain them longer, but would at once resume his seat. (*General applause*).

Mr. Fox said he was very thankful to the Chairman for the statement which had been made, but he, Mr. Fox, must again recur to the point whence he started. He had read his protest and had handed it into the Chairman; he therefore asked now to have it finally disposed of, such course was only due to the gentlemen whose names were upon it.

The resolution was then read, when the Chairman said, that as chairman conducting that meeting he must protest against Mr. Fox's

resolution being received, because if he accepted it, it would be stultifying their proceedings and losing time (*Loud cries of hear, hear, from all parts of the room*).

Mr. Fox again pressed the resolution, when the Chairman appealed to the meeting, and the resolution was condemned.

Mr. Tibbs said it was a simple protest and nothing more, and as Mr. Fox had handed it in, there was no necessity for that gentleman going farther with it; it was the same as if he made a speech upon it, because it gave his reasons for differing from the course adopted by the meeting.

The Chairman decided that he could not hear Mr. Fox, when the latter claimed to be heard, and demanded to know by what rule or regulation he was prevented.

The Chairman said he must proceed with the business of the day; the members had been summoned to perform the duty of electing office bearers.

Mr. Fox could not allow the proceedings to go on, without handing in a second protest against the election of any officers whatever, on the ground that it was illegal, and at variance with the laws regulating the College.

The Chairman reminded Mr. Fox that his resolutions had no effect, as the meeting was called to receive the report of the Committee which had been appointed at a previous meeting, to fill up vacancies in the Council.

Mr. Fox denied the Chairman's assertions, and was proceeding to speak, when

Mr. Tibbs said he wished to see fair play. (*Hear, hear*). He had not attended the meeting for that purpose, but being there he wished fair play. (*Hear, hear*). At the last meeting the question was, who was to conduct the affairs of the College until the Committee were prepared to furnish names to fill up the vacancies; it was then decided to leave the management in the hands of the remaining Council, until that time.

Mr. Fox complained that he was not permitted to be heard, and therefore he raised his voice for gentlemen to hear (*Laughter*). He claimed a right to speak, and if he spoke loudly it was not from any feeling of temper on his part. He had heard so much of law, that during the remainder of the evening he was determined they should have nothing but law. He had a second resolution in his hand, and as soon as that was disposed of he should hand in another protest.

The Chairman on reading Mr. Fox's protest, said that it had been settled at the last general meeting.

Mr. Turner thought it was a pity to be ripping up those things now, for the benefit of certain gentlemen who wished to keep the meeting in a state of ferment. When he saw the feeling of the college was against such a course, he did not see the use of reading any protest in the matter.

Mr. Tibbs asked the Chairman if he understood the latter to say, that Mr. Cartwright had stated, if they would consent to dismiss certain Members, then the Society would open the question of amalgamation?

The Chairman replied, that Mr. Cartwright had told him, the Society could not take them as a whole, but how many were to be dismissed was not stated. About one-third of the Members would be required to go. He, however, told Mr. Cartwright, that such a proposition could not for a moment be entertained by the Council of the College. He could not say who was expected to go out, and who to stay in, and Mr. Cartwright could "certainly not."

Mr. Fox's second protest was then read from the chair. He asked to say a few words; but—

The Chairman overruled him, and replied, that having put in his protest, he had no further claim upon the meeting, as the protest said everything for him.

The Committee were then called on to present their report.

The Council had thought it advisable that the report should be printed and circulated amongst the Members. Those who had not got one, no doubt saw it in the Monthly Journal, which had of late given them some little attention. *(Applause).*

Dr. Purland, as Chairman of the Committee, said the Members are all aware of the part he had taken in the Amalgamation question; but he did not think they were aware that he was anxious for it now that it had began. With respect to the proceedings of the 8th of January, he had been under a cloud for a length of time, and that cloud was not dispelled until he saw the last report of the Odontological Society. He had the common sense to read that report, and he saw immediately that the Delegates (he did not say "ourselves") had either been grossly ignorant themselves, or had grossly betrayed the College to the Odontological Society. *(Hear, hear).* They had been told that all their proceedings, in respect to the society, were treated with contempt, and that the College of Surgeons had refused

to entertain the memorial of the Odontological Society. He recollected sitting next to Mr. Fox, and that gentleman called to him—"Don't say that until you see our report; you will see it quite different." He need hardly tell the present meeting, that it was "quite different," for he found that the College of Surgeons had treated the Odontological Society with the greatest respect. (*Hear, hear*). That it would put them in the way of going to Parliament, and had even instructed its own solicitor to draw that clause in the new act, which would have been of such essential service to them. (*Hear, hear*). He contended, therefore, that if their own delegates had done their duty, they must have known of that. (*Hear, hear*). It was not known until the report, edited by Mr. Hall, had been issued, and wherein that fact was stated. Had the Members of the College known the truth, they could have joined the Odontological Society very easily. (*Hear, hear*).

As soon as that report was sent down, he wrote to Mr. Cartwright, and several copies were sent round, in order to put the matter in its true light; but only fancy men taking upon themselves so delicate a point, and yet that they should be so ignorant as not to know, or so base as not to tell the Members of the College the real position of the case. (*Hear, hear*). He had been asked if he could guarantee an amalgamation, but he thought he could not undertake to say that. He was then of opinion, that the question may still be open, and that it should be asked again, if the doors were closed entirely. He thought it his duty, as one of the Committee, to recommend such a course. Mr. Tomes had said, that the Delegates of the College had not treated those of the Odontological Society as they ought to have been treated. From the 10th of January until the 4th of March nothing whatever had been heard of the matter. Mr. Cartwright had said—"You are too many—too large; there are three hundred of you!" and offered that as one reason for not accepting the amalgamation of the whole body. He would also beg to remind the meeting, that they were without a President, but he hoped a President would be elected that night. The Committee had had some little difficulty with regard to getting a sufficient number of hands, because he believed that a certain amount of influence had been exercised by the opposition party, which accounted for two or three gentlemen not having given in their adhesion.

The report of the Committee was then read by Mr. Rymer, the Honorary Secretary, and was as follows :—

TO THE

COUNCIL OF THE COLLEGE OF DENTISTS OF ENGLAND.

Gentlemen,—We, the Committee appointed at a Special General Meeting held on the 27th of March, present a list of gentlemen competent to fill the vacant offices of Vice-Presidents and Council of the College; and although we feel that gentlemen of more mature years would have been desirable, yet our limited means of selection from want of personal knowledge of the great majority of our members, has prevented us availing ourselves, by solicitation, of the services of those probably "anxious and able" to do good service to the College, and, through the College to the profession at large.

Your Committee have had to contend with the political feelings of those to whom they have applied; some gentlemen declining to be nominated unless previously assured that an amalgamation with the Odontological Society was certain; and as your Committee could not admit that party feeling came within the scope of their duties, the loss of the services of those gentlemen was the consequence.

This remark applies with fatal force to the office of President, two out of three of the gentlemen solicited making it a *sine qua non* that that assurance should be given. Hence your Committee have not been enabled to fill the office of President.

Your Committee have been fortunate in their list of Vice-Presidents, five gentlemen having at once acceded to the application.

Your Committee have to report that, at the second Meeting, severe illness and medical advice prompted Mr. Bartlett to tender his resignation as one of the Committee, and that your Committee called in and availed themselves of the very efficient services of Mr. Kempton.

Your Committee also emphatically declare, that they have made their selection with the strictest impartiality, repudiating all personal or party feeling, and in conclusion venture to hope, that the result of their labours will meet the approbation of the Members of the College by whom they were appointed.

THOMAS HENRY HARDING, HENRY T. KEMPTON,
FELIX WEISS, THEODOSIUS PURLAND.
WILLIAM IMRIE, Jun.

April 26th 1858.

The Chairman congratulated the meeting on the result of a communication which he had had with Mr. Tibbs, one of their Vice-Pre-

sidents. He had told him (the Chairman) that he would never leave the College, although he had a long way to come. "I will not desert you," he said, "as others have done." (*Hear, hear*). He would be very glad, and he was sure so would every member present, if Mr. Tibbs would only crown that by accepting the office of President. (*Applause*). He hoped he might say it was *consumatum est*, and he also trusted that the meeting would believe that the Council and himself had done their best, and that they would do good suit and service next season. (*Hear, hear*).

Mr. Tibbs said he supposed he must take that applause as a unanimous invitation to accept the honour offered to him. (*Hear, hear*). If he saw the slightest chance of being of service to them, he would take the office without the slightest hesitation; for that object he, however, could not do so; but he felt highly flattered, and he begged to assure them that his words were not words without meaning; but he did feel, that he could not be of the slighest use; he should be happy to be a simple Member of the College as long as it lasted, and that he would not after that, join any other society, nor take office, unless he could see that something could be done. The Dentists of this country are an intellectual body. They are intellectual enough, and numerous enough, to stand alone without the reflected light of the College of Surgeons, or any other body whatever. (*Hear, hear*). If that were so, it would be far better for them to remain as they are; the Surgeons would be better pleased to see the College of Dentists remain a body *per se*, themselves; being satisfied in his own mind, that when once formed into a body, there would be found amongst them intellect and energy enough to clear away the rubbish. (*Hear, hear*). Those were his reasons for working with them, and he hoped he did not shew any sluggishness in the cause, for he came a good many miles to see them. (*Hear, hear*). He would still work with them if he could see that it would be productive of any good, but his time was really too much occupied, and he must, therefore, decline the office they had placed at his disposal. When he could see his way clear, and could do any good, let them call upon him, and he would aid the younger practitioners. (*Loud cheers*).

Mr. Bell said—that Mr. Tibbs, in accepting the office, would be of the greatest service to them. (*Hear, hear*). There was another point to which Mr. Tibbs alluded, namely—that he thought the medical profession would far more esteem them if they were an independant body. He begged to differ from Mr. Tibbs there. He had

spoken to a great many members of the medical profession, who thought that a connection with the Members of the College of Surgeons would tend to give a better position to them; in fact, that it was necessary for the College of Dentists to be Members of the College of Surgeons. When the Pharmaceutical Society commenced, it took in all the Members who were then in practice; after which, the new Members had to qualify and pass an examination. The College of Dentists would have to do the same, and then let the younger men know what *they* would have to do to become Members. Many would enter, and speaking for those like himself, they were willing to qualify and prepare themselves for whatever examination would be required. (*Hear, hear*). A Surgeon had to go to College four years, besides being apprenticed five years, although they did both at the same time.

Mr. Turner expressed his astonishment at the statement of the Chairman with respect to the disgraceful proposals of the society, in the amalgamation of the two bodies: it was dishonourable to the Members of that College to attempt at throwing the smallest part of the Members overboard. The Chairman said he only spoke from his own guess, and that the numbers would be about one-third. He should like to know what system of reasoning was pursued, and what qualifications were necessary for the Odontological Society, that was not equally necessary for the College of Dentists; the same difficulties had to be overcome by the College of Dentists as by the Odontological Society. The society boasted of its learning and scholastic attainments; they might have as much as the College; they might have more, but scholastic attainments did not carry wisdom.

The speaker then addressed himself at length to the question of the amalgamation, and was followed by—

Mr. Weiss, who deeply regretted that Mr. Tibbs had declined the office of President. It was by the union of such men that a better feeling might be produced. (*Hear, hear*). Few men had taken so active a part in elevating his class of the profession, and that class was worth elevating. He could not, however, sit down without proposing that Mr. Matthews be nominated their President. (*Hear, hear, and applause*). The college could not exist without a President; indeed, he thought they could better dispense with the office of Treasurer; but they could unite both offices in the same person.

Dr. Purland seconded the nomination, and said he saw no reason why the union of the offices could not take place. Mr. Matthews was

a gentleman residing in town, and with all due deference to Mr. Tibbs, a gentleman in town was better than a gentleman in the country. *(Applause)*. Since Mr. Tibbs would not allow himself to be made use of, they would be very glad to have Mr. Matthews for President. *(Hear, hear)*.

Mr. Fox could not agree with Dr. Purland, that the offices of Treasurer and President could be held by the same individual; at the same time he was willing to admit, that they could not have a better man than the Chairman for President. With respect to the amalgamation, he thought that question settled, for he felt satisfied that there had been some mistake, in saying the Odontological Society would not consent to it, unless the college consented to certain conditions. That being the case, he thought Mr. Matthews had misunderstood Mr. Cartwright, for he (Mr. Fox) could say, that the Odontological Society would not amalgamate on any terms with the College of Dentists. That opportunity had passed, and if they wished to join, they would have to come to the ballot in the usual way. He had heard it expressed by many Members of the Odontological Society, who took a very different view of the case to what had been stated here. He was sure Mr. Cartwright, as a gentleman and a dentist, could not have given utterance to such words, as to cutting off Members of the College.

The Chairman said, he felt bound to rise, in consequence of the remarks just made by Mr. Fox, which impugned his (the Chairman's) veracity to a certain extent. He had a high esteem for Mr. Cartwright, and that gentleman had told him, that the society had an insuperable objection to the college because there were certain Members belonging to it whom the Council did not like—strike them off, and then there would be no objection whatever. Those were the words that Mr. Cartwright spoke, and about which there could be no mistake. He (the Chairman) did not think that the meeting would find him guilty of uttering expressions which had not been used. *(Hear, hear)*. There were many worthy Members amongst their opponents: although the Odontological Society, as a body, had used them so, he had told them, that the doors of the college were open to them, and they might come whenever they chose, and see how the Council and the Members conduct their meetings. Mr. Fox must have had some private communication, to enable him to speak so authoritatively as he had done. He (the Chairman) had heard it said, by Members of the society—" Oh, the Council does everything we want, we need

not trouble ourselves at all; but you come in, you fellows, and want to be meddling and asking questions." *(Applause)*. If a man spoke at any of the meetings, and happened to be before the time, he was told that the matter had not yet come on for discussion, and therefore any inquiries about it were premature; and if he spoke after the event, he was told that he was too late, for the whole matter had already been disposed of. *(Applause)*. It was just like the College of Surgeons: there the Council did everything and anything it thought proper, and no Member was allowed to interfere. It was true they could take a friend or two into the Museum, but nothing beyond that; whereas, in the College of Dentists, everything was done openly, and a Member might stand up at a meeting, and ask as many questions from the Council as he thought proper. (*Hear, hear*). That was a privilege that was surely worth having; and he trusted that they would do their utmost to sustain the institution in which it was recognised as one of its fundamental principles. (*Cheers*).

Mr. Hockley said, that the remarks which fell from Mr. Fox shewed greater reasons than ever why they should go on with the College. (*Hear, hear*). The reason for not having all the Members of the College of Dentists in the Odontological Society, was, he thought, because their inquiring habits might be attended with inconvenience to the Odontological Council. (*Hear, hear*). He had had several meetings with Mr. Fox, "in converse sweet," when they agreed upon almost everything. He thought Mr. Fox was much in the position of a man who wanted to serve two masters (*hear, hear*), because he found, or thought he found, that the College was on its last legs, he invites gentlemen to come and give it a kick that will send it over. (*Laughter*). It was only a few days ago that Mr. Fox said he should like to see the College of Dentists go on; he thought that they had fallen asleep, and were slumbering on, and he would like to keep them awake; by way of doing so, he walks into the meeting, and enters a protest against the whole of the proceedings. (*Roars of laughter*).

Mr. Fox denied agreeing with Mr. Hockley in anything he said, and said that if the private "conversation sweet" which took place in Mr. Hockley's operating room, were to be repeated at a public meeting, he too should claim the same privilege.

The speaker then proceeded to give the details of the interview alluded to, when a general conversation of a somewhat personal and irregular character ensued, Mr. Fox and Mr. Hockley charging each

other with endeavouring to obtain each other's private opinion, Mr. Fox taking credit to himself for having seen through Mr. Hockley's designs, and thereby been enabled to keep his private intentions to himself. Mr. Hockley refused to give Mr. Fox credit for so much *reynardism* as that gentleman claimed; but Mr. Fox pointed triumphantly to the secrecy with which he had preserved his protests and resolutions for that meeting, notwithstanding the clever masked attacks of Mr. Hockley. The subject was descending to a little personal banter-duel, when—

Mr. Tibbs said, he wanted to know how Mr. Fox became first connected with the Odontological Society?

Mr. Fox wanted to explain that all along, and was proceeding to particulars, when, amid the expressed impatience of the meeting,

The Chairman said, that the present business was to elect a President and Members of the Council. If Mr. Fox wished to say anything more, he had better wait until after the President had been chosen.

Mr. Fox said he was determined his remarks should be heard; after seeing that they permitted Mr. Hockley to make remarks against him, they must permit him to do the same.

The motion that Mr. Matthews be elected as President, was then resumed by

Mr. Rymer, who said, that it was with a feeling of peculiar pleasure he supported the motion, for he was certain they could not possibly have a more able President. He was aware that Mr. Matthews had been applied to before to fill that office, but had declined it. He would ask that gentleman then, as a brother mason he would earnestly request him, to allow himself to be nominated that day, because it was of such vital importance to the College. (*Hear, hear*). No one had felt more hurt than himself at the remarks in the monthly "Journal of Dental Science," in its allusion to Mr. Matthews, because it was probably taken in by some gentlemen living in the country, who had for a time been misinformed through its mendacious articles, and it was very hard to see their Chairman attacked in the way he had been. He could not condemn, in too strong language, the treatment to which a man of Mr. Matthews's kindness of heart had been subject. He (Mr. Rymer) would entreat him to undertake the onerous office of President; and he hoped, that one of the first duties of the new Council would be to let the profession know

what was the real state of the case in regard to Mr. Matthews's exertions to bring about unanimity of action. (*Hear, hear*).

Mr. Matthews (the Chairman) said, that he was in a peculiar position. That question had occupied his mind for some time; he had studied where to find gentlemen to take the Presidency of the College —he had been asked himself, but had refused. In consequence of the part he had taken in endeavouring to bring about the amalgamation, it might be thought that he was advancing his own interests. (*No, no, no!*). He was already Treasurer, but he would be happy in the meantime to preside over them, as *locum tenens*, until a President was appointed. It would be little more than seven months, when they would be again called upon to elect a President, and he trusted they would find a gentleman more qualified than he was for the task. (*No, no!*). He said, "Yes, yes!" and by that time, perhaps, those who watched their actions would be induced to join them. (*Hear, hear*). He could hardly see that they wanted a President for so short a time, and they might very safely allow it to be in abeyance for that period. He would not go so far as Mr. Tibbs, because he (the Chairman) had it from a Member of the Odontological Society, that an amalgamation might yet be made. Therefore, considering all things, he thought it would be better to let the Presidency be in abeyance for the present; while for himself he thought he should be better as he was.

Mr. Perkins was of opinion, that Mr. Matthews had better at once accept the position now offered to him. It was quite certain that they could not have a more able man to fill the chair, and it was equally certain that they could not find a worthier or truer man for the cause, to fill the office of President. Many gentlemen had been asked to take that office, but had declined; more honour, therefore, would be due to that man, who would accept the office, and so stand as it were in the breach between destruction and the College; not that the college must necessarily cease to exist for want of a President; its business might go on in the absence of a President; nevertheless it was much better that the office should be filled. The remaining Members of the Council had been placed in a very awkward and unenviable position, by the resignation of so many of their fellow Members; they had been represented as oppositionists, and as destroyers of the College, when the real fact was that they had only done their duty to themselves and the Members by remaining faithful to the laws; their only fault had been truth to the laws, constitution, and interest of the College;

they had done their duty, while the others had deserted it in time of need; many men, who had apparently taken great interest in the movement, and who seemed to be very sincere in their professions of regard for its interests, and who in some instances had assisted greatly in its formation, had now left it. He remembered one gentleman, who had often boasted of his great faithfulness to the good work he had taken in hand, and who was wont vehemently to declare, that though all should prove false to the cause, yet if his Secretaries only would remain true to him and it, he would, with those faithful Secretaries in the little boat, fight out the battle to the end. But, alas! a sad change had come over the cause with regard to that gentleman—he had deserted his post, and many others had gone with him, leaving the few to fight the battle as best they could. He therefore begged that Mr. Matthews would not longer hesitate, or let false delicacy prevent him from accepting an office which he was in every way worthy to fill, as having remained true to the interests of the College and profession, and which he was so capable of filling with satisfaction to the members and honour to himself; besides it would stop the vulgar-old-woman kind of scandal in which a certain journal delighted to indulge, and which would circulate all sorts of curious stories about our inability to get a President; not that it could by its scandal do any permanent mischief; still, during the time that such reports went uncontradicted, many Members of the profession were misled by it, and it sometimes cost a considerable deal of trouble to undo the wrong caused by the most miserable and paltry misrepresentations. He therefore begged Mr. Matthews would prevent the excuse for any scandal on this subject, by at once accepting the office of President of the College, for which no worthier or better man could be found.

Mr. Harding fully agreed with everything that had been said by Mr. Rymer, and Mr. Perkins, and trusted that Mr. Matthews would not hesitate one single moment but agree with their wishes at once *(Cheers)*.

During the discussion, Mr. Fox, as before, entered several protests against the election of anybody, and was only silenced by the meeting giving strong indication, through several speakers, that it considered him an insufferable nuisance, which it was thought would have to be ejected the room.

The motion for the election of Mr. Matthews to the office of President was carried with enthusiastic unanimity. After the applause had subsided the President said—When he joined them as a humble Member of the College he had no idea of rising to its Presidency.

He had told them that it was far from his wish to do so, for he felt that in his own position as treasurer, he had gained their confidence and regard, and that was no small honour and consolation to him after so many attacks had been made upon him in print.

As he had told Mr. Cartwright, when two sensible men fell out the fault was only on one side, but if they persisted, the fault was on both sides. The fault was on the other side, but if he should be sufficiently fortunate to settle the differences he would be very glad, and he thought the attack upon him in the *Journal* more unwarranted on that account. (*Hear, hear*). He would not object to go to the College of Surgeons, if that was what was wanted, and he forgave them what they had done. He had gained the thanks of the College, and he would endeavour to carry out the principles of the College firmly and sincerely. (*Hear, hear*). He should take for his guidance these laws—the laws of the College, and he trusted to carry them out honestly and fairly. (*Cheers*). He thought that every member was bound to aid him in carrying those laws out. He would ask them to aid him in his capacity as President, and to give him the benefit of their assistance. (*Hear, hear*). If they were asked why they elected such a person as himself for President, they could give an answer—"because those principles which led to honour and integrity were his principles" (*cheers*); and he trusted they would heartily second him in establishing such a basis. (*Cheers*). He hoped, from that evening, that the name of the Odontological Society would never more be mentioned in that room; let it be a dead letter. (*Hear, hear*). The Society said they wished it to be a dead letter, but somehow or other they could never let the College alone. The *Journal* would have its fling at them, but those scurrilous articles had done more to exalt the members of the College in the eyes of the profession than anything else whatever; indeed, they could not have done anything so good. If those articles had been written by members from amongst themselves they could not have been done so well. (*Hear, hear, and laughter*). He trusted the College would, one of these days, shine as a luminary, illuminating all the darkened horizon around them. (*Cheers*).

Mr. Perkins could not refrain from making some reply to the very many remarks of Mr. Fox, who had complained of not being allowed to speak; although he had spoken more than anybody else in the room, always protesting against, or interrupting the business, by his definition of the law; now if he would only in a common sense and clear

manner lay down the law, there would be some satisfaction in listening to him, but he was about the worst lawyer he had ever heard or read of. He Mr. Fox had quoted part of the law relative to the number of officers in the College, and because there happened to be less than that number, he had declared that there was no Council and no College; whereas had he read a little farther on, and given them the whole law instead of dissecting out a small portion of it, and representing that little bit as the whole, they would have found that five gentlemen formed a quorum of the Council, and consequently could carry on the business of the College; it was very like amputating Mr. Tomkins's leg, and then representing the dead leg as Mr. Tomkins himself. He, Mr. Fox, had also had some difficulty in understanding how Mr. Matthews could fill the offices of President and Treasurer, forgetting that one person could properly perform several duties. He Mr. Perkins also begged to observe regarding Mr. Fox's complaint, that Mr. Hockley had endeavoured to ascertain what his, Mr. Fox's views were; he could only say, that he was sorry Mr. Hockley had so wasted his time; for he Mr. Perkins was thoroughly convinced that Mr. Fox did not know what they were himself; for he had voted almost without exception with the party to which Mr. Perkins belonged on the Council, and in the meeting had always voted on the other side; indeed, he had stated, that he, as a Member of the Council, should vote one way, and as a Member of the College the contrary way; now he really could not understand what kind of views Mr. Fox could entertain.

Mr. Tibbs suggested that they were *dissolving* views. (*Hear hear, and laughter*).

Mr. Fox said he should certainly reply, as Mr. Perkins had accused him of inconsistency — and

Mr. Perkins remarked, that that was certainly fair; and as the time was growing short, he would not detain them any longer; but allow Mr. Fox sufficient time, and give him at once the opportunity to try and put the meeting in possession of the nature of his views in general. (*Hear hear, and laughter*).

Mr. Tibbs said, that Mr. Fox had completely overlooked the case of the late Duke of Wellington when he was commander-in-chief, and held, for a short period, nearly all the offices in the cabinet. (*Hear, hear*).

A long and desultory conversation here ensued, in which Mr. Fox, as usual during the meeting, was raising all kinds of objections, and

was replied to by several members. Amongst other things the amalgamation question again came up, when Mr. Fox was taunted with having voted one way in the council and another in the meeting.

Mr. Fox defended himself by saying that his conduct had been very much misunderstood. It was perfectly competent and respectable for a man to vote one way in a council, and another at a public meeting; indeed some of their greatest trials had proved that such had been the case. On two or three occasions advantage had been taken of him by remarks which had been made by Mr. Hockley. If he voted in the council one way, and in a public meeting another way, it was because he felt constrained when with the council, and did not like to act disagreeably to the gentlemen with whom he was working; whilst at the public meeting he felt untrammelled like any other member, and voted as he pleased. He referred to his letter of explanation on this point, which he said had been most kindly printed for him. In the council a member was not allowed to entertain views on extraneous matters the same as if he was a simple member. He had only acted to the best of his belief and the interests of the profession. He voted as he did because he saw that the College was likely to go, and be joined to the Odontological Society, otherwise he should like to have a College as much as any of them, whoever it might be.

Mr. Hockley vindicated his strictures upon Mr. Fox, who, he said held his opinion, at one time in favour of independence. How these opinions could be reconciled to his change of views, he (Mr. Hockley) would leave them to determine. There could not be a shadow of doubt about Mr. Fox's endeavouring to serve two masters *(hear, hear)*; but his attempt had entirely failed *(hear, hear)*. He (Mr. Hockley), thought that a gentleman's opinions should be in accordance with his conduct.

Mr. Fox said in consequence of Mr. Hockley's remark, he certainly should claim a reply.

Mr. Hockley reiterated that he meant what he said. A gentleman's opinion should be in accordance with his public conduct.

Mr. Williams could not allow this opportunity to pass, without expressing his surprise at Mr. Fox's conduct that day. He brought forward so many objections, of so frivolous a nature, that he (Mr. Williams), felt as if Mr. Fox meant to come amongst them, and endeavour to put down the College—totally regardless of the interests or good of the profession. With respect to the question of amalgamation, about which

so much had been said, he understood when it was first put, that it was considered very desirable, although the terms were not altogether in accordance with the ideas of Members of the College. He thought it was no use keeping the question open, and he wished to know if the Odontological Society did so. They would do well by standing alone. He wished to have a simple discussion of the matter, and not to be interrupted as they had been by Mr. Fox. *(Hear, hear).*

Dr. Purland agreed with the last speaker, and in answer to his question said, if his memory served him rightly, in the report of the Odontological Society it was stated that the affair had closed, and that it was beneath the dignity of the Society to make any further advances.

The scrutineers having now returned, they declared the ballot to have elected the following gentlemen :—

VICE-PRESIDENTS.

Andrew Clark, Esq. - -	57, Brook Street
J. Harley, Esq. - - -	23a, Davies Street
W. Imrie, Esq. - - -	16, Saville Row
W. H. Lintott, Esq. - -	23, Wimpole Street
J. L. Oxley, Esq. - - -	Leeds
T. E. Rose, Esq. - - -	Liverpool

TREASURER.

P. Matthews, Esq., 17, Lower Berkeley Street, Portman Square

COUNCIL.

J. Bate, Esq. - - - -	Brighton
J. B. Bell, Esq. - - -	30, Margaret Street
W. D. J. Brennen, Esq. - -	23, Henrietta Street
W. Broadway, Esq. - -	23, Gilbert Street
E. Bevers, Esq. - - -	Oxford
T. H. Harding, Esq. - -	19, Park Square
W. L. Canton, Esq. - -	18a, Hanover Street
A. Hockley, Esq. - - -	42, Gerard Street
W. Imrie, Jun., Esq. - - -	16, Saville Row
H. T. Kempton, Esq. - -	1, Cranbourn Street
W. Perkins, Esq. - -	175, Prospect Place, Maida Hill
W. L. Spencer, Esq. - -	15, Belgrave Street
J. C. Smith, Esq. - - -	Chatham
F. Weiss, Esq. - - -	32, Great Russell Street
E. Williams, Esq. - - -	21, Southampton Street

HON. SECRETARIES.

Samuel Lee Rymer, Esq., Croydon (Council)

A. Hockley, Esq., (Corresponding, *pro. tem.*)

Theodosius Purland, Esq., 7, Mortimer Street (Library and Museum)

Mr. Rymer read the above names and declared them to be duly elected.

Mr. Fox handed in a protest against the gentlemen nominated, acting in their several capacities, and was proceeding to state his reasons to be in accordance with the by-laws, when—

The President informed him, that he, Mr. Fox, having given in his protest, he, the President, begged to enter *his* protest against Mr. Fox's being received at all. (*Hear hear, and laughter*). A protest of that nature must come from a Member of the College, and Mr. Fox was no longer a Member; therefore, he, the President, could not receive his protest, without Mr. Fox first handed over his subscription, which he would be happy to receive.

Mr. Fox contended, that there was not a single rule or by-law of the College upon which the President could lay his hands, which said what was the limit of time for Membership upon the point of subscription.

The President remarked, that a letter had been sent to Mr Fox in the ordinary way, and as he did not answer it, it was held to be tantamount to a refusal to pay his subscription, and he consequently ceased to be a Member of the College.

Mr. Fox again attempted to establish his right, and began to argue the question much against the wishes of the meeting, when he was stopped by

The President, who declared that the business for which the meeting had been called was then concluded, and he thought he might thank them in the name of the newly elected Members and himself for the honour conferred upon them.

Mr. Turner moved, and Mr. Perkins seconded, a vote of thanks to the nomination sub-committee.

The President said that their labours had been very arduous, and if those gentlemen had not had the welfare of the College at heart, they would never have worked in the manner they had done.

The vote was carried unanimously.

A vote of thanks was cordially awarded to the President for his conduct in the chair, when the proceedings were finally concluded.

MONTHLY MEETING, JUNE 1.

THE PRESIDENT IN THE CHAIR.

After the usual routine business, Mr. Rymer read the following paper on MECHANICAL TREATMENT OF IRREGULARITIES OF THE TEETH:—

The subject of the brief observations, which, Sir, with the kind indulgence of the meeting, I am about to bring forward, suggested itself to me as one well worthy the attention of the College, from the perusal of a pamphlet on irregularities of the teeth, lately published by Mr. Gaine, of Bath, one of our members.

Mr. Gaine remarks, that it is a rare thing to see a young person with a good set of teeth; by which, I suppose him to mean, a regular *as well* as a healthy set. It is certainly not often that we see *both* these excellent qualities combined, but, as regards the first quality of regularity, although it is common to speak of it as a rare quality, I do not believe it to be so rare as is supposed.

I admit that we seldom see people with *perfectly* regular sets of teeth, but it is an uncommon thing to witness irregularities of so serious a nature as to spoil the appearance of the countenance; such irregularities, nevertheless, *do* occur, and it is one of the most important duties of the dentist to correct them.

The title of this paper is sufficiently explicit as not to lead you to expect me to enter into the subject of the treatment of children's teeth prior to the period when mechanical aid is to be employed, should such aid be necessary. That is a subject which is deserving of separate consideration, as the means of rendering the use of mechanical appliances in many cases *unnecessary*. I therefore come at once to the time, when the temporary teeth are replaced by the permanent, and where irregularities of the latter are fully developed.

The writer to whom I have referred (Mr. Gaine), introduces his views by candidly stating, that whatever novelty may appear in his treatment, the success awarded to his labours has been derived from rightly understanding and correctly applying the principles established by Mr. Fox half-a-century back; he then proceeds to illustrate his method of treatment, by cases which have occurred in his practice.

Case 1 presented this appearance:—Upper jaw—two central incisors and canines projecting; laterals forced so far within the dental arch, that the lower teeth closed on and over their anterior surface. The two first bicuspid teeth had been removed. The method of

procedure is described as follows:—"My first object was to elevate the jaws sufficiently to keep the under teeth from closing on the laterals; accordingly, a gold plate was adapted to *cap* the molar teeth, and secured by means of bands attached to the second bicuspids; a thick piece of gold was then brought round the front of the mouth, and the plate doubled posteriorily over the laterals—anteriorily over the canines and central incisors, in order to make it sufficiently strong to carry and bear the action of the *screws;* by this means, I was enabled to keep up a constant, uniform pressure on all the irregular teeth at the same time. In less than a fortnight, the misplaced laterals were made to shut *over* the under teeth, while the projecting centrals and canines were so much improved as to require the insertion of longer screws. In three weeks the cure was complete, and a plate made to cap all the upper teeth. This was worn for six weeks to keep them *in situ* until firm."

I have not quoted the author's exact words, but the actual sense of his first illustrative example has been given in a condensed form for the sake of brevity. Three other cases are mentioned, but as they are examples of precisely the same treatment, namely, pressure applied by means of gold plates and screws, I need not further allude to them.

Now, although this system of practice has been found thus successful by Mr. Gaine, I must say, that I do not like the principle he recommends. I know that gold plates, with and without screws, have been used to correct dental deformities for many years, and are so used still; but, I believe, all the advantages, and frequently *more* than all the advantages secured in their employment, may be attained by the judicious application of bone and hickory wood; occasionally, however, a piece, or pieces of gold plate can be used with advantage in *combination* with these materials, but only in such cases as require the teeth to be forced inwards.

I have often seen the most unsatisfactory results of attempts at improvement upon irregular teeth, with ingeniously complicated pieces of metallic mechanism, but I have seldom seen failures where bone and wood have been the agents employed. In their use there need be no complicated machinery, as the following case will shew. It is a case somewhat similar to the first example quoted by Mr. Gaine, and will suffice to illustrate the practice to which I give preference. Miss C——'s teeth presented this appearance; upper centrals forced inwards, biting within the lower centrals, the lower laterals inclining

posteriorily so that the upper centrals were wedged between these teeth, when the mouth was shut. The upper laterals projected far over the lower teeth and lapped over the adjoining centrals. In the treatment of the case I fitted a bone plate to the upper jaw, covering the grinding surfaces, and cutting edges of all the teeth; the outer, or masticating surface of the plate, being made to meet the bite of the lower teeth. This appliance of course prevented the teeth from closing; just sufficient space was left to allow the irregularities to be acted upon without hindrance from the opposing teeth. I now inserted short box-wood pegs (hickory is preferable), in the plate immediately behind the central teeth. The dental arch being too contracted to allow of the laterals being placed in their right positions, I also fixed pegs behind the canines and first bicuspid. The plate was then secured in the mouth by means of silk ligatures attached to the second bicuspids. As is always necessary in these cases, I gave particular directions that the plate should on no account be removed. In two days the teeth had been pressed forward to the extent of the length of the pegs. This was, I need hardly observe, the result of the pressure caused by the lower teeth in mastication, etc.; the pegs acting on the inclined-plane principle. The plate was removed and longer pegs substituted for the central teeth; but the canines and bicuspids did not require these pegs as the small extra space wanted for the laterals was already secured, so that the old pegs were allowed to remain merely in order to prevent the teeth regaining their former places.

In another two days the front teeth had again been forced forward to the extent of the length of the second pegs. New ones were inserted with a similar result in due course, and in ten days the teeth overlapped the lower. Short slips of gold plate were then rivetted to the regulating piece just underneath the laterals, and bent outwards and upwards over them. The pressure upon the teeth was kept up laterally (from the central) and inwards, by merely bending the plates with the pliers every two or three days, in the direction the teeth were to take. As before stated these teeth lapped over the central, and it is evident that the pressure just described would push them inwards in a twisted form, but to obviate this, pegs were inserted behind the inner projecting sides of the teeth. In less than a fort night they had been made to take their proper positions in the dental arch.

The lower teeth were treated upon the same principle as the upper

and with like success. Gold plates were worn to keep the teeth in their places until firm, and the case was complete.

In relating the treatment pursued, I have observed, that the dental arch was too contracted to allow the laterals to be placed in their right positions, and that I fixed pegs behind the canines and bicuspids to enlarge the arch. Now in some cases room may be made for irregular front teeth by removing the first bicuspids, but as a general rule I think it bad practice to extract them, although it is a practice too frequently adopted, the evil results of which are especially apparent, where parents have placed their children under the care of those who have not given their whole attention to dental surgery. These teeth should only be removed when the contraction is of such a character as to render anything like a regular arrangement impossible, and even then it is necessary to make sure that the span of the arch will not be so far lessened as to make the patient what is termed "underhung."

It is but recently that we have had a most interesting paper brought before us, on the decay of the first molars, and from the table of operations performed on young persons, for a period of several years, presented with that paper, as well as from our own every day experience, we learn the great liability of these teeth to decay. It would appear, then, more advisable to remove the first molars, should they be unsound, than the perfect bicuspids. Although I much prefer to save them, if possible, and to avoid extraction of permanent teeth altogether.

In what I have said you will notice that it has been assumed that treatment for irregularity commences when all the temporary teeth have been shed. Decided misplacements often occur before this period, and they are more easily overcome, generally speaking; but I make use of the same mechanical appliances to correct them, as in cases undertaken at a later period.

Having thus concisely stated what I consider to be the most efficient as well as the most simple practice as regards the mechanical treatment of irregularity, I wish it to be clearly understood, that efficient and simple though I believe the practice to be, I do not mean to assert, that those who adopt it have no trouble in making crooked teeth straight. They have all the drawbacks occasioned by obstreporous young patients taking out the plates, when at school or at home, which have been carefully adjusted by the dentist—a course which renders the regulation of teeth so vexatious, that few dentists are particularly ambitious of large practice in this department of the profes-

sion. As far as I am concerned, I am not now much annoyed in this respect, as I have made it a rule never to undertake a regulation case unless the patient is at home with his relatives or friends. I explain, that unless my directions are attended to in every particular, it will be perfectly useless to proceed with remedial measures. If the plate is afterwards removed, contrary to my wishes, I at once give up the case, unless indeed there appear good grounds for believing the imprudence will not be repeated. By this course, not only is much time saved, which would otherwise have been lost, but one's credit as a practitioner is safe. It is no uncommon thing for good-natured dentists to humour their young patients by looking over continued neglect of instructions, and thus they go on and on, perhaps for several months. The natural consequence is, that their attempts at regulation end without any satisfactory result. Parents or guardians get tired of the proceedings, and, as it is scarcely to be expected that people should consider themselves, or those belonging to them, in the wrong, practitioners are condemned as incompetent, although the blame in reality lies with those by whom they are employed.

It has not been my intention, in these imperfect remarks, to enter into the minutiæ of the various contrivances employed in the correction of dental irregularities, but simply to recommend bone plates, and pegs of wood, as preferable in every respect to metallic plates and screws.

I hope the subject will be sifted in the course of discussion, when it is possible my opinions may undergo modification, although I must confess that I have so much faith in the agency for good, of bone and wood, that I scarcely think my mind will be changed. Still, many of us have been led to clearer notions and more correct views on the several subjects which have already been brought before us in papers read from this place, through the very lucid and practical explanations so readily and so kindly given in the course of discussion, by our elder and more experienced Members, and if anything should be said this evening in recommendation of a better practice than the one I have adopted and recommended, I hope to be the very first to acknowledge the superiority.

DISCUSSION.

The President said that Mr. Rymer had succeeded in bringing into notice a most important subject, in a condensed form ; although

his paper was short, it was entirely to the purpose. He quite agreed with Mr. Rymer, that of the materials in use for the regulation of teeth, nothing could surpass bone plates and hickory wedges. Capping teeth with gold had a tendency to destroy the enamel, and he had for many years banished its use in his practice. He would invite gentlemen present to express their sentiments on the subject.

Mr. Harley always used bone and boxwood in regulation cases; he considered the wedges should be shouldered. The President observed that hickory was far superior to boxwood. The hickory ought to be passed through the draw-plate.

Mr. Turner had heard no valid objection to the use of gold; he did not approve of Mr. Rymer's method of tying in the piece. Patients residing at a distance from the dentist might find it most inconvenient. Mr. Turner then quoted two cases of extraordinary projection, which had occurred in his practice, and agued that bone and wood could not have accomplished the satisfactory results attained in these cases, by the use of gold and screws.

Mr. Bennett was surprised the subject had not been treated at greater length, and illustrated with diagrams. He did not know whether he had followed correctly, but his impression was, that Mr. Rymer had not described any means of drawing projecting teeth inwards. As to bone, there was nothing at all novel in its use. He would like to know whether Mr. Rymer considered he had brought forward an invention of his own?

Mr. Rymer.—Certainly not.

Mr. Bennett continued— In fitting bone he scraped the teeth of the model, in order to get a very accurate fit. Some years ago Mr. Robinson thought an improvement might be effected in the means of regulating teeth, and he (Mr. Bennett) had suggested, that instead of making use of an inclined plane, the action of a spiral spring fitted into bone, adjusted in the usual way, would effect all the advantages of pegs, without the inconvenience of the latter. He could not, however, describe this invention correctly, for want of illustrations, but he might say, that the spring acted like a jack-in-the-box.

With regard to gold, Mr. Rymer had objected to its use, without describing the way in which he would bring in projecting teeth. He did not see how bone could be applied in the case of a projecting central incisor.

Mr. Weiss had an objection to tying in plates, if it could be avoided. He generally preferred the use of bone, which would hold

in without tying. When gold was employed, india rubber bands were best to keep the plate in position.

Mr. Williams said, he felt he ought to say something on the important subject under discussion, having formerly been a fellow assistant with Mr. Gaine, to whom Mr. Rymer had referred. The case of Mr. Gaine, mentioned in the paper, he had seen, and had brought the models with him. He followed the plan recommended by Mr. Gaine with great success. He considered bone more trouble to make use of than gold; moreover, the latter could be more readily altered.

Mr. Broadway would like to see a specimen of the gold plates and screws used by Mr. Gaine.

Mr. Williams would have much pleasure in shewing one to any gentleman present who would call upon him.

Mr. Broadway was of opinion, that the reason gold was objected to was, that it injured the teeth by erosion. He had found gold destroy the enamel, and had therefore abandoned its use. In cases of projection, the teeth might be brought in by a spiral spring acting from the front. He had never seen a case where tying was necessary. Mr. Bennett's plan he thought complicated, and preferred hickory wedges as at once simple and efficacious. With regard to screws he could not understand how they acted, and certainly the projecting heads must cause irritation. There was no objection of this sort in bone. The hickory pegs could further be readily reinserted, when the old ones had ceased to be of use. The hickory should be well compressed.

Mr. Perkins. Mr. President:—Regarding the subject under discussion, I think I may say, that I have had considerable experience, and certainly must give the preference to bone, with box or hickory wedges, in all cases where teeth require regulation. I have had many and various cases, and have arrived, on the whole, at very satisfactory results. I have known a few cases where gold, with screws, &c., have been decided failures, and where bone used upon the plan described by Mr. Rymer, has completely succeeded in those same cases. The objections which I have to gold with screws, &c., are the annoyance to the tongue, caused by their projecting heads; the difficulty in some cases, of obtaining a sufficient thickness to allow of the misplaced teeth passing forward into their proper places, and the injury which the gold, in my opinion, inflicts on the enamel of those teeth which are covered by it. Now, in the case noticed by Mr. Rymer, of the central upper incisors biting into the lower circle, it is of course

necessary that the jaws shall be kept sufficiently open, as to allow the teeth acted on, to pass clear of the lower teeth; in some cases a quarter of an inch in thickness is required; with gold, this is not easily attainable with convenience to the patient; true, you may solder a block on to your gold plate to keep the mouth open, but then your patient loses a portion of the masticating surface; whereas, with bone properly fitted to the upper jaw, and the bite of the lower accurately fitted into that, you may obtain any thickness you desire, and at the same time your patient has the whole of the masticating surface to make use of, and the piece being perfectly smooth, the tongue is not annoyed by it. I recollect a case some years ago, of a young lady who had a twisted lateral tooth; my advice was asked as to the best method of regulating it; I advised bone with a wedge against the inner angle of the tooth, with a ligature passed through the bone frame and tied tightly against the front of the tooth, by these means, while the wedge inside the mouth pushed that part forward to which it was opposed, the ligature in front would have acted in a diagonal direction against the angle of the tooth that required turning inwards; in short, a twisting action would have been produced; however, my advice was not taken, and a very pretty ingenious gold bar was made, with a neat screw to act against the tooth; the lady wore the bar about three days, when she considered that the nuisance of the screw against her tongue was so intolerable, that she declared she could not wear it any longer. I should tell you, the lady was, to the best of my recollection, about seventeen years of age, (not a child). As gold and screw would not answer the purpose, or was not allowed to be used any longer, it was necessary to resort to some other method, and bone was accordingly tried, but not as I had advised; the gentleman who had the case liking his own way best (as most of us do) had it modified to suit his own ideas, and so be different from what I had suggested. I think the case had been in hand about three months, when the dentist went out of town for a fortnight, leaving his business to be attended to by a friend, with whom I was also intimate; the case was mentioned to me again; I repeated my opinion, and this time it was acted on; the tooth was brought into position in less than a week.

Another case of gold I recollect, which I once made for a dentist who had studied Mr. Bell's book very attentively. In this case the patient was the dentist himself; I advised my own plan as usual, but he preferred his interpretation of Mr. Bell; I therefore, under his

direction, made him a gold plate which was intended to move an upper canine from the inside of the lower circle to its proper place outside; the mouth had to be kept partially open, and the whole force of the lower jaw was thus brought to bear upon the one unfortunate canine tooth. The gentleman complained of the tooth becoming very tender, and also of great pain in his temples, and after persevering for nearly a day, he could not be persuaded to continue it any longer. I have never seen a case that could not be accomplished by the use of bone, in some cases combined with gold; as where teeth are angularly placed, and require a twisting force so as to raise the depressed angle without moving the tooth bodily forward, in which case, a gold plate rivetted on to the bone, and turned up in front against the outer angles, and a wedge placed against the inner part of the depressed angles, produce the necessary action, and the desired effect is produced. I therefore, speaking from my own experience, give a decided preference to the theory set forth by Mr. Rymer.

Mr. Purland had succeeded better with gold than bone, although he did not deny the usefulness of the latter in certain cases. He employed steel screws in a gold bar. He objected to bone, on account of its bulk. To fix in the plates he used gold tye-wire. As to injuring the enamel, cases of irregularity were soon out of hand, and the gold did not remain in the mouth sufficiently long to do any injury.

Mr. Bell thought that regulation cases as described by previous speakers had been completed far too rapidly. He generally took much longer than the time mentioned for keeping teeth *in situ*, when the regulation was complete, than six weeks. In conjunction with his partner he had lately treated a peculiar case by means of torsion, which succeeded admirably. He neither liked pegs nor screws, but held with springs, or india rubber bands. The patients should be instructed to change their own bands. He (Mr. Bell) neither condemned gold or bone—both were good, according to the several cases in practice.

Mr. Spencer could not think that bone might be made available in such a case as the one mentioned by Mr. Turner. Hickory wedges would not keep up a continuous pressure, but a spring brought round the front of the mouth might be made to do so.

Mr. Bennett observed, that he would endeavour, at a future meeting, to bring forward his own invention improved upon.

Mr. Weiss wished to correct a mistaken notion with regard to

irregular teeth affecting speech. Irregularities had nothing to do with articulation.

The President said that Mr. Weiss must be considered to make that statement as his (Mr. Weiss's) own opinion.

Mr. Purland felt confident that the position of the teeth had much to do with correct enunciation.

The President remarked, that Mr. Weiss's observation was scarcely in order, and as it was now late he would call upon Mr. Rymer to reply.

Mr. Rymer felt, that he need not detain the meeting much longer, as most of the objections raised to his preference for bone, had been answered in the course of discussion. Great diversity of opinion had been expressed, in reference to the best material for correcting dental deformities, and, although he had heard nothing to convince him of the superiority of gold over bone, he had, no doubt, from what had been said, that both were useful. He was glad that Mr. Bennett had intimated that it occurred to him, that he (Mr. Rymer), had spoken of bone as a new invention, because it gave him the opportunity of correcting such an impression. Every dentist must know, that both gold and bone had been in use for very many years, and the object of his paper was to recommend one of those materials as preferable to the other. The discussions in that room came to the knowledge of rising members of the profession throughout England, and throughout the world; it was, therefore, important that various opinions should be courted. For this reason he had not attempted to exhaust the subject, by entering into minute details, and making a lecture out of it. He thanked the meeting for the kind reception he had received.

The President :—

> Our experience proves, that everything is good,
> Whether it arise from use of bone and wood,
> Or from the practice of luxurious gold,
> Combined with screws, by others, as we are told.

MISCELLANEOUS.

DENTAL MEMORANDA.

By T. Purland, Dentist, Phil. Dr. Surgeon-Dentist to the Mesmeric Infirmary.

Continued from page 123, vol. II.

" Daily Advertiser, July, 1766.

" Mr. Bellejean, Partner to Mrs. Jullion, at her house, the Two Heads in Coventry Street, takes this method of returning his sincere thanks to the Nobility and Gentry for their particular favours already received, and humbly hopes they will continue the same as the Business of Surgeon-Dentist in all operations of the Teeth, Gums, Sockets and Palate, as in the late Mr. Jullion's time.

" Where may be had, the most excellent Dentifrice and admirable Tincture, which cures the Scurvey in the Gums, and preserves the Teeth white and clean."

" Daily Advertiser, Sept. 7, 1766.

"MRS. JULLION begs leave to acquaint the Nobility and Gentry, that she continues to carry on the Business of her late Husband in Coventry Street, Haymarket, and can assure them, she has got a Person who is perfectly qualified to perform all the several operations of scaling and cleaning the Teeth, after the same manner as the late Mr. Jullion did them, and has given entire satisfaction in the several different Operations he has performed, and she hopes for the continuance of their favours. Where may be had, the excellent Dentifrice and admirable Tincture for cleaning and preserving the Teeth and Gums."

" Daily Advertiser, Sept. 15, 1766.

"S. BELLEJEAN, Operator for the Teeth, late Successor to Mr. Jullion of Coventry-Street, deceased, begs leave to acquaint the Nobility and Gentry, whom he has had the honour to serve, that he is no more with Mrs. Jullion, but for himself, and lives at the Golden Head, opposite to the Chapel in North Park Street,

Grosvenor Square, where the Continuance of their favours will be gratefully acknowledged, by

"Their most humble Servant,

S. BELLEJEAN."

"DAILY ADVERTISER, OCT. 1766.

"**MRS. JULLION** having been obliged, from ill-usage, to part with Mr. Bellejean, who she finds is attempting to draw away her Customers from her, and in order to prejudice her, stiled himself successor to the late Mr. Jullion; Therefore she begs leave to acquaint the Nobility and Gentry, that she continues to carry on the Business of her late Husband, at her house in Coventry Street, near the Haymarket, and can assure them she has now got a person far superior to the said Bellejean, who is qualified to give entire satisfaction in the several operations of making and setting artificial Teeth, from one single Tooth to a whole Set, Gums, Sockets, and Palate, scaling and cleaning the Teeth, and every other Article concerning the Mouth; he executing the Business altogether on the plan of the late Mr. Jullion; and she hopes for the continuance of their favours.

"N. B. Mrs. Jullion hopes the presumption of Mr. Bellejean by stiling himself superior to her late Husband, and taking such advantage of a Widow, even in the public papers, will be a plea sufficient for her taking this Method of undeceiving her Customers."

"DAILY ADVERTISER, 10 OCT. 1766.

"Samuel Bellejean, Operator for the Teeth, late Successor to Mr. Jullion, in Coventry-Street, begs leave to acquaint the Nobility and Gentry, who he has had the honour to serve, that he now lives at the Golden Head, in North Park Street, Grosvenor-Square, where the continuance of their favours will be acknowledged, by their most humble servant, Samuel Bellejean. N.B. As Mrs. Jullion has by her Advertisement cautioned the Publick from false pretenders, and informed them that there is no other successor to him than the Person now with her, I think it my duty to acquaint the Publick, that upon Mr. Jullion's death, she knowing my acquaintance with him, and my knowledge of his principles in Business, sent for me from Paris to succeed him, and which I did for some time."

DR. BLAKESLEY'S METHOD OF FILLING TEETH.

It may be laid down as a maxim, in filling teeth, that the cavity, in the first place, should be perfectly freed from all decay, and that it should be of such a shape as will prevent the material used for filling from escaping. In order to secure this result, it is necessary that the interior of the cavity should be of larger dimensions than the orifice. Watts' Crystal Gold Foil can be welded, in such a cavity, into so solid a mass, that it is impossible to separate or displace it except by violent means. It will not crumble and fall away in particles, *if properly inserted*, which all other gold foils (according to my experience), are liable to do. In order to secure this solidity, I deem the use of comparatively small instruments essential, as by their use the newly-introduced portions of foil may be more thoroughly incorporated with that already in the cavity.

In describing my mode of preparing the tooth, I shall, in order to adapt the description to the various positions of cavities, use the term bottom to indicate that surface of the cavity which is opposite the opening, whether that opening be upward, downward or lateral. After having thoroughly cleansed the cavity, I proceed to give it the shape as before stated; which I accomplished with small English broaches of suitable length, by slightly drilling or perforating the anterior and posterior angles of the upper part of the cavity, and also in the lower angle. I then connect them by drilling along the circumference between the enamel and the bony structure of the tooth, and also by means of a diamond pointed excavator, cutting in the same manner; thus forming an entire groove around the cavity. In cases where the walls of the cavity are frail, I rely almost entirely on these grooves for the retention of my filling, making them of considerable depth, so that when the filling is introduced, it is literally dovetailed; the portions of gold occupying these grooves form projections from the main mass, with which they are thoroughly incorporated, thus rendering escape impossible.

To prepare my gold for filling, I take a sheet of Foil (say of No. 4), and with my hands perfectly dry, lightly roll it into the shape of a rope, I take halves, thirds, and quarters, and treat in the same manner: these I cut into square lengths, and thus have a series of pellets, from moderate size down to that of a small pin head.

I commonly require about three sizes of filling instruments, turned at different angles, to suit any and every case that may be

presented; the points of those in most constant use, will just enter respectively Nos. 22, 24, and 26, of the wire gauge. The end of the smallest is cut with a screw-head file, into three well defined, rather delicate points, not too deep, and that of the larger into four points, observing the same precaution concerning the depth, or else the instrument will not disengage itself without tearing away part of the gold, while attempting to introduce it, thus choking the instrument and rendering it useless until freed of its burden.

I commence to fill by inserting as large a pellet of gold as will occupy the upper part of the cavity; and continue adding pellets from side to side, until one-half of the bottom is covered; I then apply moderate pressure by direct and lateral force, till the whole is tolerably condensed. I then endeavour to free it from the wall of the cavity at its edge. If I find I can do this; into the artificial cavity thus formed, I introduce other small pellets until it is completely filled—hard and solid. I repeat the operation on the opposite edge, and then firmly condense this portion of the filling, which now lies immovable, and in a fit condition to be welded upon. I then proceed to fill the other half of the cavity, in the same manner, commencing from the lower part of the cavity, taking great precaution to have this portion well filled, as it is one of the most important points; and make firm the line of junction of the two halves, by forcing in small pellets wherever I can make a depression. I then weld on particles of gold until the cavity is filled up flush with the surface of the tooth, and when it is desirable, add on in such direction and quantity as to restore the original outline. In some cases of longitudinally-fractured incisors, I have thus built on an addition of one-third or one-half of the original width of the tooth. My patients often express great delight at this perfect restoration of the shape of their teeth.

The above is more particularly a description of cavities in a lateral position of the incisors; the same principle, however, holds good in all other cases, simply varying their position. When I have a very large cavity, for instance in a molar tooth, I sometimes commence by inserting whole, half, or quarter sheets of foil, lightly formed into pellets of an oval or globular shape. In such cases, I frequently use a wedge-shaped instrument, serrated at the point; finishing off as in ordinary cases with smaller pellets. I conclude the operation as usual, by polishing, "giving a surface," which this foil receives to an eminent degree.

Some operators have said that the crystal gold foil hardens too

quickly. I experience no trouble from this source, as I avoid applying sufficient pressure to render it unyielding until I am ready to condense it.

It is important to avoid, when this gold is used, a rounded shape of the cavity, as such a shape has a tendency to allow a pellet to escape from under the instrument, when you attempt to apply another one to it, while an angular shape serves to prevent this.

To sum up, I would say, avoid the use of too large instruments; avoid introducing the gold in too large masses; and avoid applying pressure till the gold is where you want it to condense and harden.

ON A CASE OF THE

SIMULTANEOUS INTRUSION OF SOLIDS INTO THE AIR-PASSAGES OF BOTH LUNGS.

By C. C. Claremont, Esq., M.R.C.S.

(From the Lancet.)

Although cases are both numerous and interesting of foreign bodies occupying the air-passages, yet, I believe but three are recorded where the substances have been a tooth or fragments of a tooth.

Of these, the first is reported in the *Dublin Medical and Chemical Journal* for 1834, vol. v., by a Mr. Houlston, and ensued upon extraction of a tooth from a man aged thirty: here the root and fangs of a lower molar passed into the right bronchus, and death was the result in eleven days.

The other two cases are related in the *Edinburgh Journal* for the same year. One, where an artificial tooth (a pivoted incisor) disappeared from its place during the process of mastication, and slipped into the lungs. It was ejected in eighteen months; but phthisis had been set up, and the patient (a lady) sank at the termination of the third year.

The other is a most remarkable case; that of a young girl, aged seventeen, into whose lung an entire lower molar found a passage. On the eleventh day it was dislodged, and recovery followed. In neither of these cases was any operative procedure adopted.

Now, if such accidents occur under ordinary circumstances, is not the danger enhanced by the use of anæsthetic agents? The profession is, I am well aware, alive to the casualties incident to anæsthetic operations; but do we sufficiently guard against these exigences in dental operations? Should lethal vapours be applied, for example—when the teeth are known to be brittle, what operative

skill can protect the patient from the passage into the glottis of teeth, or the fragments of teeth, when he is physically insensible?

On the 7th of February, I accompanied Mrs. ——, a young married lady, to one of our most eminent and skilful dentists, for the purpose of having three teeth extracted. The patient had been suffering for some time, and it was deemed desirable, in consultation, to administer chloroform.

The anæsthetic agent soon exercised its influence, and the operation was dexterously performed; but, unfortunately, on removing the third tooth, a molar on the lower jaw, it splintered beneath the grasp of the forceps, and it was necessary to have recourse to the "elevator." From commencing the inhalation of the vapour to the conclusion of the operation, only three or four minutes elapsed. The patient, on becoming conscious, had a violent fit of coughing and screaming. It soon subsided, and she expressed much satisfaction at having been so agreeably divested of her "old enemies." She suffered none of the after effects of chloroform—complained only of a little soreness about the chest, which I attributed at the time to the paroxysm of coughing, &c. I thought that the coughing was occasioned by a little blood having trickled into the glottis.

It may be here noticed, that previous to the visit of Mrs. —— to the dentist, she had suffered from no affection of the chest. It was, consequently, with no small surprise, on reaching her home, that I observed a remarkable peculiarity in her breathing; and on auscultation, it appeared that her lungs were in a state *resembling* effervescence.

During the day and in the night she had frequent fits of coughing, was restless, and experienced uneasiness about the chest. Her breathing during sleep was described by her attendant as like that of a child suffering from catarrh. On the following morning (Sunday) I found all the symptoms of bronchitis increased, the whole of the lungs engaged in the inflammation, the fits of coughing were more frequent and violent, but unattended with pain. The patient expressed her belief that she had swallowed a tooth; and this remark being confirmatory of a suspicion which I had begun to entertain, I lost no time in seeking the co-operation of Dr. Jenner, who, on being made acquainted with the facts, after a careful examination, expressed a doubt as to the existence of a foreign body in the lungs, they seeming to be generally and equally affected; and, in the absence of stethoscopical evidence of such a fact, he was rather disposed to attribute the symp-

toms to the irritating and pungent effects of the anæsthetic vapour. The patient was free from fever, and during her whole illness was not prevented from going about the house and superintending her domestic matters. The treatment adopted was that for simple bronchitis.

The symptoms continued to increase, the coughing became more violent, and the nights more restless, up to the evening of Wednesday, when during a paroxysm of coughing, several small fragments of dental enamel were coughed up. I say several fragments, though I am disposed to think it originally consisted of one thin lamina; it might have been crushed in the mouth. Great relief on the left side immediately followed the dislodgement of this portion or these portions of tooth, and on this side the characteristic râle was soon lost. Presuming the cause of the evil no longer to exist, I looked for a cessation of the symptoms generally. I was deceived; for on the right side, instead of an abatement, we had an augmentation of the symptoms; there was now considerable rhonchus over the whole of the right lung; the breathing became more noisy, and my attention was directed to a fixed spot, (corresponding with about the termination of the right bronchus,) where a remarkably loud cooing was heard at each inspiration: occasionally this was intermittent, and after one or two inspirations was heard again. She complained also of a fixed pricking pain passing from the margin of the sternum through to the scapula. Her breathing could be heard across a room of tolerable dimensions; it disturbed her husband at night, and was sufficiently loud to attract attention and elicit observations from her children. There was an inability to lie on the affected side, and she was frequently obliged to sit up in bed to relieve her breathing, and occasionally her sputa was tinged with blood. Her symptoms were augmented with accelerated circulation.

On Friday I again had the assistance and advice of Dr. Jenner. He thoroughly examined her chest, but nothing could be elicited to throw further light upon the case. On percussion, the lung was resonant throughout; rhonchus prevailed generally over the right side of the chest, and, with the exception of the cooing, there was nothing to indicate the presence of a foreign body.

On the next morning I was suddenly summoned, and found her coughing and retching violently; she pointed to the larynx, and requested me to examine her throat, as she felt something cutting like a fish-bone. I did so, and also examined the matter ejected. There was nothing to explain the attack; but I have not the least doubt,

that at this moment the sharp and rugged portion which was ultimately discharged was forced into the larynx, and not hitting the opening of the glottis, had fallen back to its old quarters.

Matters thus remained for a month, without much abatement, or increase of symptoms. Dr. Jenner saw the case frequently, and shared in my anxiety for the result. The patient occasionally complained of a disagreeable taste in the mouth, but no fœtor was apparent to others. The rhonchus on the right side, cooing, cough and noisy respiration continued, and its influence upon the system was becoming very manifest.

On the thirty-fourth day after the operation, she retired to rest, complaining of more than usual pain in the old spot, and of weariness. In the night, she stated, that while making a painful effort to shift the position of her child, she seemed "to twist" herself, and happening to cough slightly at the same moment, a substance flew into her mouth. She placed it in her husband's hand, saying—"Here's the tooth at last." I was sent for, and on examining her breathing, found the rhonchus and cooing had disappeared, only a little harshness remaining. In twenty-four hours the lung had recovered its healthy and normal tone.

On examining the fragment ejected, I found it covered with blood, and it was certainly a most formidable-looking body to be an occupant of the lung. It consisted of an irregular, rough, four-sided portion of the crown of the molar, with projecting sharp corners. Weight, seven grains.

It should be stated, that a little hæmoptysis immediately had followed the dislodgment.

Thorney Place, Oakley Square, 1858.

Monument to Jenner.—On the 17th of May (the birthday of the immortal discoverer of Vaccination), a distinguished company of scientific men assembled at the College of Physicians, to inaugurate the statue erected to his memory in Trafalgar Square. The Prince Consort presided on the occasion, and there were also present, the Bishops of Oxford, and Bath and Wells; the Marquis of Lansdowne; the Lord Mayor; Earl Ducie; Lord Ashburton; Dr. Conolly; Mr. Pettigrew, &c.

The monument itself consists of Jenner seated in an arm chair. The work is executed in bronze, and mounted on a granite pedestal,

the simple name, JENNER, being inscribed on the base. By familiarising the public with this statue, it is hoped to further the cause of vaccination.

Although men who have been the means of saving many lives are justly entitled to equal honours with those whose business it is to *take* life, it cannot be denied that there is something ludicrous in the appearance of Jenner, seated as he is at the corner of Trafalgar Square. We should prefer to have seen his statue in connection with a Central Vaccine Institution.

REVIEWS.

Archives of Medicine: a Record of practical Observations, and anatomical Researches, connected with the investigation and treatment of disease. Edited by LIONEL S. BEALE, M.B., F.R.S., &c. Nos. 1 and 2. London: John Churchill.

Dr. Beale is so well and favourably known to the medico-scientific world, that the announcement of a periodical with his name associated as editor, has at once secured well-deserved support for a half-yearly record of observations and researches connected with the investigation and treatment of disease, entitled *Archives of Medicine.* The first two numbers of this periodical are before us, and, judging from the talent displayed in the various interesting and thoroughly practical papers they contain, we venture to predict, that it will justly and speedily occupy a proud position in the first rank of scientific literature.

When profit and pleasure are experienced in the perusal of a work, it is natural that regret should be felt by the reader when he reaches the significant word *finis*, and although we may hope it will be long ere we come to such a word in its full meaning, on the last page of a number of the *Archives of Medicine*, we are sensible of feelings of disappointment in closing our copy of the last issue, when

we reflect that nearly six months must elapse before we can open another. Upon consideration, however, we are convinced that a more frequent publication would foil the object of the projectors of the undertaking. It is but too evident, that the weekly and monthly press devoted to medical and kindred science have altogether failed to maintain a dignified position. The time required to prepare scientific essays worthy of imperishable record can scarcely be spared by those most able to supply such essays, and it is no doubt owing to this fact, that so few intellectual productions are to be found in journals continually being hurried through the press. When a paper worth reading does appear in a weekly, or monthly, how often is it lost amongst a mass of mediocrity!

It is satisfactory to reflect that, in the journal under notice, we may expect to find in future, as we have found before, *nothing* but that which is of *intrinsic worth*. There is ample time in the intervals of publication to provide matter worthy of its pages, and it seems to be determined that everything connected with unprofitable disputation shall be excluded.

The following is an extract from a paper in the second number, entitled—

Observations on Tumours connected with Bones. By Mr. J. W. HULKE, F.R.C.S.—"The great interest, which is felt in this subject, both by the pathologist and by the practical surgeon, has induced me to communicate the following notes of some cases which have occurred in King's College Hospital, during the last few years, illustrating some of the most important varieties of these tumours. For the history of these cases I am indebted to my former teacher and colleague, Mr. Fergusson, who has placed his hospital-case books at my disposal for this purpose: whilst the microscopical details are taken from my own memoranda written at the time of observation. I am fully aware that these notes are very fragmentary, and might have been more methodically arranged; but I would offer, as some excuse

for this disconnectedness, the plea—that they have been taken from time to time, as cases have presented themselves, without reference to any special study of these affections."

Tumours composed entirely of Bone.—Tumours and outgrowths, composed wholly of bone, are instances of hypertrophy, or are examples of cartilaginous and fibrous growths which have undergone complete ossification. Hypertrophy affects sometimes the compact, sometimes the cancellous tissue. To use Mr. Stanley's own words: —"This is a condition which consists of an increase of size from the augmentation of its healthy tissue." Leaving, out of consideration for the present, those instances of hypertrophy which occur in the neighbourhood of diseased joints, and in the vicinity of necrosis, in which we can trace the relationship of cause and effect, there are other examples in which we are quite unable to assign any reason for the exuberance of growth; this is particularly the case in hypertrophy of the bones of the face, amongst which, the upper jaw is, perhaps, most commonly affected. Hypertrophy of the upper jaw usually occurs in young subjects, a fact which has led some persons to attribute it to irritation, connected with a faulty condition of the teeth, and this especially when the alveolus is the part chiefly affected; yet, on the other hand, it often begins far away from the alveolus in the body and the nasal process of the bone.

CASE 1.—*Bony Tumour of the Upper Jaw, with a Tooth embedded in it. Hypertrophy.*—Eliza C——, æt. 13, was admitted into King's College Hospital, May 14, 1856, with a hard tumour of the left upper jaw, involving the alveolus, but not encroaching upon the palate, nose, or orbit. It had been growing for three years. It was removed by Mr. Fergusson, and was found to consist entirely of firm bony tissue, with a tooth embedded in it.

CASE 2.—*Bony Tumour of the Upper Jaw. Hypertrophy.* —Elizabeth H——, æt. 16, was admitted into King's College Hospital 12th June 1856, with a tumour of the right upper jaw-bone. It was first noticed a year before her admission. It involved the body of the jaw, the nasal, and the alveolar

processes ; it had pushed the lower turbinated bone inwards towards the nasal septum, but it did not encroach upon the cavity of the mouth. The malar bone was more prominent than natural, but did not seem to be itself implicated by the growth. The tumour was removed by Mr. Fergusson, and was found to be composed entirely of compact bony tissue, without any traces of a cartilaginous, or fibrous matrix. The haversial canals were very large, irregular in outline, and very frequent inosculations were seen ; the septa between the canals were proportionally narrow, and the osseous tissue wanted the regular lamination peculiar to the Haversian systems of normal bone ; indeed, concentric lamination could be observed only in the immediate vicinity of the vascular canals. The appearances closely resembled those which are found in the very vascular bone from the neighbourhood of sequestra."

With this extract we must conclude our notice, merely adding, that many well-executed illustrations serve to elucidate the subject of the several papers.

On certain Irregularities of the Teeth : with Cases illustrative of a novel Method of successful Treatment.— By CHARLES GAINE, Member of the College of Dentists of England. Bath : C. W. Oliver.

This is a well-written little work of some thirty-five pages, which will repay perusal. The subject of which it treats has lately received more than usual attention, and judging from the proceedings of the last monthly meeting of the College of Dentists, it would appear that the first impetus to this attention was given by Mr. Gaine, in the publication of his treatise.

The Dental Register of the West, edited by J. TAFT and G. WATT. March 1858. Cincinnati.

Many useful and interesting papers appear in this number of the Dental Register. We are especially pleased with Mr. Taft's observations on filling, also a communication on

professional personalities. We should have pleasure in transferring these articles to our pages at length, but space will not permit. We have, however, in another portion of this Journal, taken from the Register, a short though important paper upon the teeth of the Natives of India.

Journal of Practical Medicine and Surgery, edited by Dr. LUCAS CHAMPIONNIERE.

For twenty-eight years has this Journal maintained a respectable position in France, and at the beginning of the present year, it was determined to commence an English translation for the convenience of those practitioners in these islands, who would wish to keep themselves informed of the career and progress of medicine and surgery with our neighbours on the other side of the channel. To such we can confidently recommend the Journal of Practical Medicine and Surgery, as a compendium of all that occurs of professional importance in France.

The following Letter, addressed to Mr. Davenport, of Hull, has been forwarded to us for publication:—

731, Spruce Street, Philadelphia,
Pennsylvania, U. S. May 31, 1858.

DEAR SIR,—Having heard of your reputation as a Dentist, I have taken the liberty as a fellow townsman and member of the same profession, of addressing you regarding (and for information on) a subject which is just now creating considerable discussion in this community, viz.—As to whether galvanism has been applied in England, in the extracting of teeth, for the purpose of avoiding all pain, and if so, by whom, and when introduced.

A gentleman in this city claims to be the originator; but I am under the impression, and have asserted that the discovery was made by some dentist in England; and being desirous of giving "honour to whom honour is due," I have thus presumed to trespass upon your time. Should you condescend to reply to this, I shall be pleased to reciprocate, and forward you the particulars and mode of operating by us, also of any new discovery.

This application of galvanism is known to only a very few dentists in this country, and if it is not understood in England, the information may be very valuable to you. An early answer will greatly oblige,

Yours, most respectfully,
JAMES W. BERRY, M. D. Dentist.

NOTICES TO CORRESPONDENTS.

All communications intended for insertion in this Journal must be authenticated by the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

Contributors are requested to be so obliging as to write legibly, and on one side of the paper only.

Contributions intended for insertion in the next number of the *Quarterly Journal of Dental Science*, should be sent to the publishers, (addressed to the Editor) *not later* than September the 1st, and as much *earlier* as possible.

***** The remaining back numbers of this Journal may be obtained of the Publishers, at Three Shillings per Copy.**

INQUIRER.—The adapted forceps were introduced by Mr. Matthews, in 1823. The forceps of Mr. Fay, who we believe came to this country from America in 1827, were on a different principle, and somewhat resembling one since made public as a patented invention, by Mr. Gilbert. We must refer you for further information to Mr. Robinson's contributions on the subject, published in previous numbers of this Journal.

Mr. RICHARDS.—It is with regret that we have been unable to insert your essay. The demand for space has rendered it impossible. We will return the manuscript as desired.

Mr. HOCKLEY is thanked for his obliging communication.

ELECTRIC CAUTERY.—A letter on the subject will be found in another portion of our impression, from the pen of Mr. Harding, which will be a sufficient answer to the numerous inquiries we have received in reference to the electric cautery.

A POOR PRACTITIONER thanks us for our article in the last number of the Journal, on the duty of establishing a benevolent fund, and hopes we will not allow the subject to drop. We are fully impressed with the importance of providing for our poorer brethren, and we hope to see an effort emanate from those whose success in practice has placed them in a position of affluence. But we would advise "A Poor Practitioner" not to rely upon his more fortunate brethren bestirring themselves. He should provide for those dependent upon him by insuring his life to the extent of his ability.

Mr. J. COX SMITH'S communication was received too late for insertion. It shall appear in the next number.

W. T. B.—First—The conduct you allude to is beneath contempt,

and certainly does not call for any trouble on your part. Second—The print was started by a person who patented a process for taking out teeth without pain; it was afterwards offered to the College of Dentists for a good round sum, and a threat made at the same time, that, unless the offer was accepted, the paper would be handed over to the oppositionists. Of course the offer was refused, and the publication became the property of the oppositionists accordingly.

J. E.—This Journal is published by an independent proprietary, and not in connection with the College of Dentists.

Mr. Atherford's excellent suggestion shall be acted upon.

The publication of many interesting communications is unavoidably postponed for want of space.

*** The present number contains the first of a series of important original articles, which we intend to publish on the Chemistry of Materials used in Dentistry, the efficient services of Dr. Paul having been expressly retained for this purpose.

Communications, Letters, &c. have been received from Dr. Hawkins, Mr. Atherford, Mr. W. Perkins, Mr. A. Stewart, J. E., Inquirer, Mr. T. H. Harding, Dr. Paul, Mr. Richards, W. T. B., Mr. Hockley, A Poor Practitioner, Mr. J. C. Smith, Mr. Gaine, Mr. Sass, Dr. Taft, Dr. Purland, Mr. C. J. Fox, Mr. Horne, &c.

BOOKS RECEIVED.

Dental Register of the West.

Toothache Cured by the Electric Cautery, by T. H. Harding.

On Irregularities of the Teeth, by C. Gaine.

The Lancet, May 15.

The Dentist (Edited by C. W. L. Schmedicke, Berlin), 5 parts, from Oct. 1857 to Feb. 1858, inclusive.

Archives of Medicine, Edited by Lionel Beale.

Journal of Practical Medicine and Surgery.

The attention of Correspondents is particularly requested to the fact, that communications intended for insertion in the next issue, should be sent to the Editor at least one month before the date of publication.

The next Number of this Journal will be published on the 1st of October.

Charles Ritchie & Co., Printers, Fore Street.

THE

QUARTERLY JOURNAL

OF

DENTAL SCIENCE.

Charles Ritchie & Co., Printers, Fore Street, London.

THE

QUARTERLY JOURNAL OF DENTAL SCIENCE.

OCTOBER 1858.

THE NEW MEDICAL ACT.

IN our last number we hinted, that it was more than probable that the Legislature would recognise the existence of the Dental Profession in the Medical Bill then before the House of Commons. In another portion of this Journal will be found the New Medical Act, as confirmed on the 2d August last, from which it will be seen, that we were not far wrong in our conjectures, and that the thin edge of the wedge has been inserted, towards a just and liberal national acknowledgment of a body of men, to whose labours the public are indebted for a great amount of alleviation from acute suffering in various forms, and for much personal comfort.

It is not our intention to enter into a lengthened commentary upon the Act, as a very careful perusal of its clauses has convinced us, that it will have but small effect on the Medical Profession, except as a first step towards that radical reform which is so urgently called for, and which will assuredly be obtained, if its Members will only make a firm and united stand for their rights. Such a result, we apprehend, will necessitate an enfranchisement of the Members of the Colleges severally, because the authority which belongs to irresponsible Councils has always proved itself inimical to unselfish policy and liberal action.

As we have said, the existence of Dentists is recognised in the New Act.

Clause XLVIII, empowers Her Majesty to grant, by Charter, to one of the existing licensing Surgical Bodies, power to institute examinations in Dental Surgery, of such persons as may *feel inclined* to present themselves for examination, and to grant "Certificates," of proficiency (not Diplomas), to such persons.

This Clause was introduced into the measure by Mr. Beresford Hope, upon the solicitation of certain influential Members of our profession, and as it stands at present, can certainly be productive of no harm, although we are of opinion, that the College of Surgeons will find it no easy matter to carry out an effective system of examination, unless the curriculum is of a nature to make it nearly as easy to obtain a full Diploma, as a mere Certificate. One may, therefore, well exclaim, *Cui bono!* for assuredly the Mechanical Examination would be inefficient. As the Clause originally stood, Mr. Hope had been induced to word it, so that an institution not in existence, "The British College of Dental Surgeons," might become an Incorporated Body.

Thus the parties who suggested the Clause, had not the candour to state, that "The College of Dentists of England," was already in existence, and that the title they intended to adopt was a mere copy of that of an established public body, this quiet work was all done in secret; still the Council of the College of Dentists discovered the manœuvering in time to get the offensive portion of the Clause struck out; therefore it will answer no good purpose to dissect the motives of those who attempted to get it passed, and we will proceed to the last Clause in the Act.

The last, or LV Clause, then, is one of the utmost importance to the Dental Practitioner, and if the College of Dentists had accomplished no more than to have succeeded in obtaining exemption for Dentists from the operation of

Clause XXXII, it would have accomplished enough to deserve the gratitude of the profession at large.

By Mr. Cowper's Original Bill, none but registered persons would have been enabled to recover charges for any advice or operation whatever, unless specially exempted as Chemists and Druggists. The Council of the College of Dentists lost no time in representing the injustice of placing so necessary and respectable a profession as that of the Dentists, as it were, under a ban.

Mr. Walpole, the Secretary of State for the Home Department, who rendered such material aid in getting the Bill passed, was communicated with on the subject; Mr. Cowper and many other influential Members of Parliament were also waited upon, and the claims of the Dental Profession to equal privileges with the Chemists and Druggists, was so forcibly pointed out, that we have the gratification of finding Dentists exempted from the operation of the XXXII Clause.

The liberality of sentiment displayed by the Council of the College of Dentists, in urging upon Government the claims of the profession generally, instead of the Members of their own College specially, renders it a far more pleasing duty, thus to record our appreciation of their services in this matter than it would otherwise have been.

As it is, whilst we congratulate our fellow practitioners on the result accomplished, we have but one feeling of satisfaction in tendering to the President and Council of the College of Dentists of England, our sincere acknowledgments of those disinterested exertions for their brethren in practice, which, in the case of the New Medical Act, deserved, and has won success.

We trust the good work of advancing the public interests of the Dental Profession thus commenced in the Legislature, will be steadily followed up, as opportunities occur, and that henceforward the unseemly jealousies of party may be sunk for the general weal. If the Profession were only united, it

would, ere long, be a possibility to obtain a special act for its regulation. It must not be forgotten that few in the Profession, comparatively speaking, have as yet taken part in recent discussions, and that they, viewing with an impartial eye, the mischief done through pressing the claims of conflicting opinions, are awaiting the calm which should follow the storm, to join in honours which they must know cannot belong to such as take no trouble to win them.

"With much, much more dismay,
I view the fight, than thou that mak'st the fray."

PROTESTANTISM AND THE COLLEGE OF DENTISTS.

IN THIS COUNTRY a good Protestant is generally understood to mean an individual who takes a determined stand against any arrogant assumption of authority tending to curtail the liberties of mankind, and it is an undeniable fact that the independence of Great Britain has been secured mainly through the exertions of men, who have scorned the favours and braved the threatenings of corrupt Sovereigns and Governments. So long as Protestantism is made to exercise itself against aggression and wrong, Englishmen will ever be found ready to uphold it; but when it is made the means of attacking lawful authority temperately administered, those by whom it is employed for such a purpose must not be surprised if they find themselves mistaken as to the effect produced. We have been led to this reflection by contemplating the conduct of certain practitioners in our own ranks, who have taken part in the great cause of Dental Reform. Up to a certain point these gentlemen acted with consistency; some of them as Members of the Council of the College of Dentists; but in an evil hour, they were perverted from their previous convictions. We shall not pause to enter into discussions upon the negociations connected with the amalgamation propositions. All are aware that the Dele-

gates on the part of a private society had the best of those of a constitutionally-established body, and that if the Amalgamation, so much desired by every well-wisher to the Profession, was to be consummated, the College of Dentists was to sacrifice its independence, its name, and its laws, whilst the private Society would sink its name only. It is much to be regretted, that the College Delegates were unequal to the task which they sought and were allowed to undertake, for we believe that if men of stanch and firm convictions had been appointed, a very different result would have been attained. However, all this is past; the proposals have been rejected, the Delegates and their supporters have resigned, and so would the matter have rested, had it not been for a very curious transaction which our readers will find recorded more particularly elsewhere. We will briefly recapitulate the particulars connected with the transaction alluded to.

On the 27th of March last, a Special General Meeting of the College of Dentists was held for the purpose of taking the sense of the Members upon the course to be pursued in consequence of the rejection of the proposed terms of amalgamation. At this Meeting it was announced that the Gentlemen on the Council whose opinions had not been endorsed by the College, declined to allow themselves to be nominated for the new Council. In the regular order of business under such circumstances it would have been the duty of those Members of the Council, who retained their seats, to have prepared a new House List, but the position occupied by them was of a very difficult nature, and on the motion of Mr. Tibbs, a resolution was passed by which they were relieved from this onerous duty, a Sub-Committee of five independent Members being appointed to nominate a new Council. Now let it be well and distinctly understood, that this resolution *received the support* of those who resigned their seats at the Council Board.

The Sub-Committee of five independent Members sub-

sequently succeeded with no small trouble, in forming a new Council, the Members of which at once assiduously employed themselves to conduct the business of the College so as to secure the greatest benefit to the Profession at large. Amongst other things, it was considered advisable that the curriculum contained in the By-laws should not be submitted to the Members for sanction; and as this curriculum could not be put into operation without such sanction, a notice was given to the Profession accordingly.

The necessary revision of the laws was then proceeded with, and the Council having expended much time and labour in adapting them to the requirements of the College, a General Meeting was called for July 16, to confirm the revision. On the 16th July, then, a large Meeting of the Members was assembled, and the President having stated the object of the Meeting, a gentleman rose and requested to speak on a subject foreign to the business of the evening. A courteous assent was given to the request, whereupon was witnessed a proceeding so much at variance with consistency, that our pen would certainly have refused to perform its office in recording it, had we not been present on the occasion to observe with our own eyes, what took place. The gentleman alluded to was present when the Sub-Committee of five was appointed, and he was one who held up his hand in favour of the appointment of such Sub-Committee—a Sub-Committee, be it remembered, specially elected with the view of meeting the difficulty consequent upon the resignations of a majority of the late Council. Could it be possible that he intended to repudiate his own act and deed; or was he about to suggest some new element of strength in the constitution of the College? A few moments dispelled all doubt; he handed in a protest couched in the following words, signed by himself and others who had assisted in forming the existent Council:—

"We, the Undersigned, hereby protest against the Con-

"stitution and Acts of the Council of the College of Den-
"tists of England, alleged to have been elected at a General
"Meeting of Members, held Friday, May 21, 1858, on the
"following grounds, viz.—That by Law IV, it is expressly
"declared that two-thirds of the New Council shall consist
"of Members of the last year's Council.

"Of the list of Council as at present put forward, only
"eight were Members of last year's Council; and consequent-
"ly, a fundamental law of the College has been broken.
"And we further protest against all acts of the Council
"as illegal, and demand that all monies of the College
"expended by such Council be refunded, each Member of
"the said Council being personally liable for the same."

Such was the "protest," read by one who voted for the appointment of the Sub-Committee of five. We leave it to unprejudiced and honest minds to judge, whether the Members of the Sub-Committee and those of the new Council elected on their nomination have reason to look upon this conduct otherwise than with surprise, not to say indignation.

It remains to add a few words upon the means employed to obtain signatures to the protest. Previously to the meeting, a printed copy was sent to every Member of the College, together with a circular, which circular announced that the protest would be presented in consequence of the old curriculum not being enforced; and requested those who wished such curriculum enforced, that they would sign it. As it was difficult to reconcile the sole ground upon which the protest itself was founded, namely—the required two-thirds of the old Council being wanted in the new, in consequence of the refusal of such two-thirds to continue in office, with the views expounded in the circular, members were in ignorance as to the object of the prime movers in the protestation; but the Council speedily set matters in a clear light, by informing the Members that the whole proceeding was intended to result in the destruction of the

College. This being the case, to the honour of the great majority of the members be it stated, only sixty-eight members, including its originators, could be found to sign the protest, although no stone was left unturned to obtain a majority of signatures in its favour; whilst 232, or more than three-fourths of the whole body of members, declined to have any thing to do with it, and many of them in various parts of the country communicated to the Council an expression of full confidence in the executive.

We may now well leave this painful subject without commenting upon the unprecedented proceeding of handing in a protest, printed on sixty-eight separate slips with as many signatures, written, but not attested. Attestation is, in many cases, merely a form; nevertheless, in the matter of these protests, it would have been a satisfaction if precautions had been taken against the possibility of mistake.

PROFESSIONAL QUALIFICATIONS.

ON THE 25TH OF AUGUST last, was held a most important Meeting of the College of Dentists; the result of which is, as we write, still uncertain. The object of the Meeting was to submit to the Members certain proposed Regulations relating to Candidates for the Diploma of Membership of the College of Dentists of England, to come into operation on the 1st January 1861. These proposed Regulations are as follows:—

I.—Candidates shall be required to produce the Diploma of the Royal College of Surgeons, or that of some recognised home or colonial licensing surgical body.

II.—Candidates shall also be required to produce a Certificate of having been articled to a dental practitioner for a period of not less than four years;

such Certificate to be delivered to the Secretary of the College thirty days before the Candidates shall be eligible for their dental examination.

III.—Associates of the College enrolled, and Pupils who shall have been articled to Members of the College previously to the foregoing regulations coming into operation, shall be eligible for Membership by passing a dental examination only.

IV.—Any Member who shall maintain his membership for a period of three years after the ratification of these rules, shall be entitled to the Diploma of the College. And any person who may become a Member previously to the foregoing regulations coming into force, shall be entitled to the Diploma of the College upon the expiration of the third year of his membership.

It would appear that, upon coming into office, the new Council recognised the importance of adopting, without delay, FIXED REGULATIONS in regard to the qualifications necessary for membership. The merit of the curriculum contained in the by-laws was discussed, but it was determined not to submit it to the Members for confirmation, because the machinery necessary to carry its provisions into effect could not readily be brought into operation under the circumstances in which the profession was placed. And even if the unsatisfactory and complicated system, formerly contemplated, were practicable, it was judged advisable to abandon it in favour of one more clear, distinct, and unmistakeable.

The Council having come to such a conclusion, the question as to what would be a clear, distinct, and unmistakeable system, upon which the diploma of the College should be granted, of necessity arose, and after mature deliberation, it was resolved to submit the regulations we have alluded to for confirmation by the Members.

With regard to the regulations themselves, it will be necessary to give to their consideration almost all the attention which it required to produce them, in order to understand their full force aright.

The grand object of the College is to raise the *status* of the profession, to accomplish which, as its laws declare, the Dental Profession should become a recognised and independent body. The College has already effected a legislative recognition (to a certain extent) of the Profession, with regard to its independent position, that is a position which ought to be watched with the most jealous care, otherwise the unsuccessful Surgeon will still have an opportunity of calling himself a Dentist, and practising the charlatan. We have heard it rumoured that the College of Surgeons may institute a board of examiners in Dental Surgery, but we know enough of the Council of the College of Surgeons, and of those Dentists who alone are likely to be allowed to give an opinion as to the proficiency of Candidates for a Special Certificate (and a Certificate, after all, is not worth much), as to feel assured that an unsuccessful Surgeon would have more chance of obtaining such Certificate than a really practical Dentist, whose head had actually been employed in directing his hands in their work at the bench, long enough to enable him to feel indisposed to be questioned as to his ability by a board of mere theorists.

To provide a satisfactory examination, and to grant a Diploma which will carry weight with it, the Council of the College of Dentists recommend two main points.

First—That proof shall be produced that the Candidate is qualified as to surgical requirements.

Second—That he is competent to undertake the practical department of the Profession, including, of course, mechanical work.

As regards the first point, there are existing many corporate bodies recognised as granting satisfactory proof of the

required qualification. Nor would there be any difficulty in the second point, as there are a large number of practitioners who are willing to, and who do, impart to their pupils the requisite knowledge of the practical department of the profession.

Here, then, is the whole machinery of education already in existence, and the way in which it works is so well known, that he who runs may read.

An Examining Board, in connection with the College of Dentists, would complete the system.

The third and fourth clauses of the propositions of the Council must not be lost sight of, otherwise we might be blamed for approving that which, in part, we previously condemned, when speaking the illiberal and impracticable views of those who would allow none but Surgeons, pure and simple, and without mechanical qualification, to practise as Dentists.

The third and fourth clauses clearly provide that all respectable Dentists in practice at this time, and before January 1861, may become Members of the College without reference to the first two clauses: and, that after the expiration of three years from the time of joining, they will become entitled to the Diploma of the College.

This solution of a difficult problem meets the various opinions which have been promulgated from time to time, and if the fact will only be candidly acknowledged by the several parties into which the profession is split, an end will have been attained, at which all concerned will have good reason to rejoice.

In commencing these observations, we stated that the result of the Meeting on the 25th August was still uncertain. The reason of this is that the Council determined to take the sense of the Members generally upon a question of such moment, and although the propositions were unanimously adopted at the Meeting, a poll was demanded by the Council.

This course was rendered the more necessary, as there are not wanting those who would wish to make it appear that the Executive attempt to carry on the business of the College, without reference to the Members.

The result of the poll will be found in a postscript, and it will at once be apparent to our readers that the tenure of office by the present Council, is dependent upon the adoption of the propositions by the Members.

DENTAL SURGERY AND MECHANICS.

ON THE REGULATION OF TEETH BY EXTRACTION.

By John Cox Smith, Esq. Surgeon-Dentist to the Rochester, Chatham, and Strood Dispensary.

Few subjects connected with Dental practice are more worthy of attentive observation than the prevention or cure of irregularities of the permanent teeth. How often, in advanced life, does the Dentist meet with dentures presenting irregularity, in some cases, amounting to facial deformity, from neglect of the operations of nature at a certain known period. How frequently does that deformity produce decay, and how disproportionate are the trouble, pain, and expense then incurred to remedy the mischief done, to that which would have been necessary to prevent it at the time when its probable existence was first indicated. I do not know whether my experience be the same as that of my professional brethren in general, but some of the most difficult cases I have met with in supplying artificial teeth to patients of mature life, have been where the loss of the natural organs may be clearly traced to their irregularities, and the void thereby occasioned in the one jaw, has to be supplied in such manner as to articulate with a great amount of irregularity in the other.

It is impossible to attach too much importance to the necessity of preserving the regularity of the second set, because the unsightly appearance evident in early life is sure steadily to increase, especially in all those cases where one jaw closes irregularly over the other. In the first instance, let us take the very ordinary example of a central

in the upper jaw, growing so as to present the anterior instead of the posterior surface to the action of the lower jaw. Now this irregularity, slight as it may seem at seven years of age, will at fourteen have influenced the arrangement of two other teeth—the two laterals, one in either jaw, on the side of the mouth in which the irregularity has occurred, in this manner:—

The upper central impinges not only on its corresponding central below, but from its greater width on the lateral, pushing them both outwards. The lower lateral becomes thus exposed to the two opposing forces, and being pushed out at one corner by the offending upper central, and kept in at the other by the upper lateral, in this unnatural position both gives and receives injury. This is on the supposition that only one section of the mouth is so influenced, but it is well known that in four cases out of six the one side shares with the irregularity of the other. I am of course confining this observation to this particular class of irregularities.

As the patient advances in life, so much irregular action on what are proverbially the weakest teeth in the head, produces the loss of them in one of the following methods. Either they become loose and fall out, or rapidly decay, and in some instances are chipped to pieces.

Now the cure of these irregularities by mechanical methods, is an important branch of dental science, and is accomplished often successfully, by various methods by different professors of the dental art. This subject has given rise to much very profitable and interesting discussion, and so long as the question be, which plan is the best, is likely to remain much longer a disputed point. In a discussion of this kind, I have heard, bone upper pieces, ditto lower, ditto with pegs, ditto with ligatures, pieces with spiral springs inside the arch, ditto outside, straight springs, bent ditto, buffers, jack-in-boxes, gold plates with screws, ditto without, silver plates, and many other contrivances, lauded much by different gentlemen; and as these methods were mentioned in connection with cases in which they had been useful, the impression on my mind was, that they were all good, and each plan would be admirably adapted to some particular case of irregularity. But it is not my intention to enter on this part of the subject, my object being simply to call attention to prevention, rather than cure, and the influence that the timely extraction of the temporary teeth has in inducing the healthy and regular advent of the permanent set. I believe that were the first teeth extracted in time, the second would very rarely be irregular. I think that children's

teeth should be the subject of systematic observation, and I lay it down as a principle, that whenever the advent of the upper seem to be unusually delayed after the appearance of the lower, the temporary teeth should be carefully removed; and will endeavour to assign good reasons for this procedure.

A glance at the skull of a child of six years of age, reminds us of the fact, that the crowns of the permanent teeth lie behind the fangs of the temporary ones, so that, if from causes exceptional, or otherwise, the temporary teeth be retained too long, the permanent ones will make their appearance behind them. Now a misplacement of this kind in the lower jaw presents no difficulty; all that is wanted is *room*, and this is obtained by extraction of as many as may be deemed sufficient. In the upper, when this is perceived, of course, this is done, but generally too late, as when once through the gum at a considerable distance behind the temporary teeth, they rarely have time to regain their proper position before they come into contact with the lower, thus inevitably forcing on both parent and dentist the conclusion, that had the operation been performed earlier, it would have been still more successful. Now I know that the impression is popular, not only with the profession, but also with parents, that temporary teeth should always be allowed to remain as long as possible, because they are intended to be absorbed into the substance of the permanent set, and a paper has recently been published having a tendency to take this view of the case; but this appears to be a process connected with the earlier stages of the development of the permanent tooth, and I believe that the extraction of the temporary teeth, even though it should happen to be performed rather early, would be attended with no injury to the second dentition.

I consider, that even after the fang of a temperary tooth is nearly absorbed, the connection of the tooth with the gum only is sometimes so strong, that a very serious obstacle is frequently offered by that circumstance alone to the proper advent of permanent teeth. My attention was first directed to this circumstance by the following case:—

Miss H—— was brought to me by her parents for consultation. She was eight years of age, rather delicate, and possessing an amount of nervous excitability which materially interferes with the tractability of a young patient. The right permanent central was fully developed, the place for the other was occupied by the crown of the temporary tooth; immediately above it was a dull, hard, circum-

scribed tumour, that to a dentist seemed sufficiently intelligible. All this was simple enough, but the peculiar part of the case was this :— All these appearances had existed for nearly twelvemonths. I at once explained my view of the case, and recommended the immediate removal of the remainder of the temporary tooth, which was very loose; but the bare mention of anything of the kind threw the child into so violent a state of excitement, that I did not attempt it. I thought I should like to see for myself, if so apparently slight an obstacle would prevent the permanent tooth coming through, and recommending the occasional application of a leech, together with a little alterative treatment, I allowed the matter to go on. For four or five months did this state of things exist, until, becoming better friends with her dentist, my little patient permitted me to remove the stump. A fortnight after the tooth came through. Now I confess that this case made considerable impression on me. Here was a permanent tooth obstructed in its development for nearly eighteen months by a mere shell, and the fact, so far an isolated one, becoming known to me by accident, seemed an excellent illustration of the mischief which doubtless frequently occurs from allowing loose stumps of temporary teeth to remain in the mouth, under the impression, that being loose they can offer no real obstruction to the development of the second set. The child was doubtless rather delicate, but not more so than many children naturally are, or are sometimes most unnaturally made to be by the existence to which they are subjected, by being confined so many hours a-day in the close and unhealthy atmosphere of a crowded schoolroom, too frequently worried up the hill of knowledge, and a large amount of cerebral action induced at a time of life when physiology proves, that an abundant supply of fresh air, plenty of healthy exercise, and much rest, are most necessary for the proper development of the human frame.

I think that many permanent teeth are for ever prevented from making their appearance, by the retention of the temporary ones till too late in life. The second bicuspid I have frequently seen most efficiently extinguished by the second temporary molar, which in some instances has been simply retained by the adhesion of the gum, in other cases by the growth of the first permanent molar behind it, and the first bicuspid in front; and as the permanent teeth always rise higher than the temporary set, the temporary molar was firmly locked in by the bulge of the crowns of its neighbours. I once saw a case of this kind in a lad of fourteen, of very highly nervous tem-

perament, who was very subject to epileptic fits. I made the remark that the condition of his teeth was far from regular, intimated the possibility of its affecting his health, and recommended attention to the subject; but the lad objected, and the parents were quite satisfied with the opinion of Dr. A——, "who would have told them had there been anything the matter with the teeth;" and so I was silenced—I cannot say that I was convinced.

It may not here be irrelevant to say, that I think that at about the period of shedding the first molars, that children are sometimes very inconsiderately treated. I have frequently seen youth of both sexes, who have been brought to me with the gums in either jaw turgid and swollen with the struggle that was going on.

On asking questions I have frequently found great constitutional disturbance, such as thirst, heaviness, sense of oppression, &c., and other evidences of being utterly unfit for occupation in scholastic duties, or at least to have them pressed urgently upon them. But such is the tyranny of custom, and the importance that is attached to "*getting on with their studies*," that many a weary hour is passed in the humdrum of classroom occupation, injurious to the pupil and unsatisfactory to the teacher.

I will close these few remarks with reiterating my belief, that many of the irregularities of the permanent set would be prevented by more careful observance of the mouth during the period intervening between the appearance of the permanent teeth in the lower jaw, and those in the upper. That at that period the temporary teeth may be safely extracted, without doing violence to any known laws respecting the physiology of the teeth, and should certainly be removed should the dentist notice much apparent stability, thickness of gum behind them, or unusual delay in the appearance of the permanent teeth corresponding to those of the lower jaw that have last made their appearance.

SPORT OF NATURE.

Communicated by HENRY T. KEMPTON, Esq.

Teething at three score years and ten! very few believe it out of the pale of our profession. Nature, sportively speaking, certainly laboured

et mus nascitur, after all the pains and torture resembling infantile teething of some months' duration. The following case came under my observation the other day:—An old lady called upon me professionally; and on examination of the back part of the maxillary bone, I found a wisdom tooth, with the crown as white as alabaster, and like the first milk teeth of childhood—the contrast in colour to the other molars which had seen active service in many conflicts with fish, fowl, oxen, pigs, enough to satisfy M. Soyer I have no doubt, is indeed not to be named—the brightness and innocence of the new created tooth at this advanced age, compared with the old ones, was marked, the latter exhibiting tints of every shade of colour but white. I will forward a cast of the case to the Curator of the College of Dentists, for every preparation will help to enlarge our Museum.

Ten months since, the patient informed me she suffered excruciating agony in the bicuspid teeth of the same side, and inducing erysipelatous inflammation of the greater part of the face, and rendering the circulation torpid and phlegmonous, and only on the removal of the bicuspidati did the inflammation subside: and two months after this, a hard substance higher up made its appearance to the great joy of the old lady, who had really cut her wisdom tooth, at this advanced age, without fit or fainting, but not without great suffering.

Generally in these late productions the ossification advances, the pulp is covered with bone, excepting the under surface where the fangs begin to be formed, such as is common in dentition, but in these preternatural formations the enamel is rarely completed, the action of mastication soon destroys its vitality, and early decay ensues.

The ordinary age at which these molars appear is between twenty and thirty; and these *dentes sapientiæ* have, in some instances, been cut at the age of forty, fifty, sixty, even up to eighty years; and again, it sometimes happens that they do not appear *at all*. The circumstance of this old lady having one at the age of nearly seventy, may be an effort of nature to assist in a fresh supply of blood for the repairs of the body, by a more perfect mastication of food; therefore, to aid and abet so reasonable a demand, she desired me to supply her with some artificial molars, on which she may be able to triturate her food properly.

Below is a drawing of the cast of this interesting specimen.

8, Princes Street, Hanover Square,
August 1858.

CASE OF COMPLETE LUXATION OF A CENTRAL INCISOR,

By James Bate, Esq.

The teeth from their prominent position are liable to a variety of accidents, and a blow that will cause merely the loosening of a tooth in the head of one person (thanks to a robust constitution), will perfectly eject it from that of another, and cause permanent injury to the organ ; for example—a tooth of a firm compact structure, losing part of its substance, will remain in the same state, whilst one of a less developed nature, receiving the same amount of injury, will decay rapidly ; it will therefore be obvious, we must arrive at conclusions resulting from lesions, by the state of the tooth, also the constitution and health of the patient.

When either of the front teeth are, through a blow or any other accident, wholly or partially luxated, it is the province of the dentist to do all in his power immediately to replace the same; but, unfortunately, success so seldom crowns these efforts, that it behoves us, when we are favoured by happy results, to make known our experience. Thus actuated, I subjoin the following case, which came under my care in August of last year:—

August 29th 1857.—Mrs. F—— consulted me relative to her little girl, who had fallen against the handle of a door, by which the left central incisor had been perfectly ejected; the tooth was brought to me in a piece of paper, the accident occurring better than an hour prior to my seeing her.

After a close examination, and ascertaining it to be a simple luxation (that is, not complicated with laceration of the gum, or alveolus), I cleansed the socket, and carefully and firmly replaced the tooth, securing it by a ligature of dentist's silk, and then with very soft wax I proceeded to take a model. Obtaining the necessary casts, I struck up a plate to cap over the injured tooth, so as to prevent the possibility of the lips or tongue disturbing it, likewise keeping it firmly in its place by silk ligatures. Two hours had now elapsed since first seeing my little patient, on whom I enjoined perfect quiet, and requested that nothing but fluids should be given her. A day or two after, on visiting her, I found my advice had been rigidly followed, the tooth getting set in its socket, but the gums much swollen and inflamed; I then removed the plate, and ordered a lotion of aconite to be applied to the gums with a camel's hair brush. I visited my little patient every alternate day, and found the lotion of the greatest benefit, having reduced the inflammation very much.

September 3rd.—Child feeling much more comfortable, tooth not nearly so tender; removed the ligatures with which the tooth was first secured.

16*th.*—The tooth was capable of bearing a heavy pressure.

28*th.*—A slight abscess over end of fang; tooth very firm, but slightly longer than its fellow, which is not yet fully developed; lanced the abscess.

October 24th.—Having found the lower teeth coming in contact with the tooth under treatment, thereby exciting irritation, made a plate to cap the under teeth so as to prevent their touching the

upper; ordered an astringent lotion, again lanced the abscess, which is gradually getting smaller.

27th.—Called to-day to have the plate filed clear of the left under incisor, which is coming rather on the interior of the mouth, causing the plate to ride—tooth much firmer.

January 15th 1858.—Filed the plate clear of the under growing tooth, the upper being firmly in its place, and looking quite natural, with the exception of being slightly longer than its fellow, which in a short time will not be noticed, when properly developed. The chief cause of success is the remarkably robust health of my patient, and the strictness with which my advice has been carried out. She still continues to wear the plate, and will do so until the molars are well up, and obviate this necessity.

April 24th.—Was told the tooth was quite comfortable, and once more of use, being quite free from abscess; and I would here remark, that all meddling with luxated teeth, prior to their being replaced, should be avoided, it being of the utmost consequence to return them to their former position with as little delay as possible, after the coagulated blood is removed from the alveolus. In the foregoing case it will be obvious that much valuable time was wasted, thus rendering it more uncertain.

47, Old Steine, Brighton.
July 1858.

AN IMPROVED BELLOWS BLOWPIPE.

By William Hopkinson, M.C.D.E.

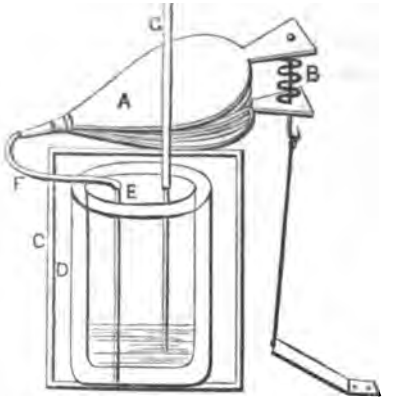
I can most heartily endorse what Mr. Humby has stated with respect to the advantage of a bellows blowpipe in saving the lungs, having used one for the last seven years with great advantage. The one I use perhaps differs from Mr. Humby's. As I have not had the pleasure of seeing that gentleman's I enclose a description of mine for insertion in the valuable pages of the *Quarterly Journal of Dental Science*. I can get a continuous stream from it, even when I take my foot from the treadle, and can get a large fierce flame that would melt an ounce of silver or gold in far less time than I have taken to write

this description—a flame as fine as I wish for the most delicate manipulation. Get a tinman to make two vessels of zinc, each fourteen inches long and twelve inches in diameter, let one be an inch less in diameter, which one you invert bottom upwards into the other, and solder stays to both vessels so as to keep them steady, the inverted vessel to be kept from touching within an inch of the bottom of the other. Pierce two holes in the inverted vessel three inches apart, through which pass two pieces of ordinary brass tubing, projecting out from the top an inch, for fastening your tubing to, let one end of the brass tubing pass to the bottom of the vessel, the other to within one inch of the bottom; then put into the vessel from three pints to two quarts of water; next get a pair of common kitchen bellows; to the inner parts of the handles fix a stout spiral spring of iron wire, so that when the bellows are at rest the handles may be six inches apart: through this spiral spring, and attached through the handles, have a piece of stout strait iron wire, hooked at the top, and with a loop to the bottom for fastening the string to the treadle for working the bellows. Next, make a stout wooden frame to fit the zinc vessel, to the top of which screw down the bellows, taking care to leave a corresponding hole in the frame to the wind hole of the bellows.

Now place altogether conveniently under your work bench, fasten a piece of wood with a hinge to the floor for your treadle, through the end of which fasten a stout string, and carry it up to the loop of the wire attached to the handle of the bellows: the next thing is to attach a piece of India-rubber tubing from the nose of the bellows to that pipe of the zinc receiver touching the bottom, fix another piece of elastic tubing to the second brass pipe in the receiver, which carry up through a hole in the bench to your blowpipe.

The blowpipe I consider best is one of Herapath's, which you can screw to your gas pipe. You have now everything in working order. Two or four persons may work from the same bellows, by having a brass elbow branching in as many directions, soldered or screwed on to the short length of pipe attached to the zinc vessel, and having fixed to it as many pieces of elastic tubing and blowpipes. I have three work at my bench. The advantages of this blowpipe, I may repeat, are great, as a continuous stream is kept up from the jet, whilst, in manipulating, the right hand is at liberty.

Annexed is a sketch of the machine in working order:—



A. Bellows.
B. Spiral spring and iron hook passed through handles which must work loose.
C. Wood frame of four pieces nailed together to hold zinc vessels.
D. Outer zinc receiver.
E. Inner zinc receiver.
F. Elastic tube from bellows to pipe in zinc vessel.
G. Elastic tube from ditto through bench to blowpipe.

34, Boughton Road, Salford, Manchester.

CHEMISTRY.

CHEMISTRY OF PLATINUM, IN CONNECTION WITH ITS USE IN DENTISTRY,

By B. H. Paul, Ph. D.

This metal, like gold, occurs native, and almost always in the beds of rivers, or in alluvial deposits, originating from the disintegration of rocks, situated in mountain ranges. Near Nischne-Tagilsk, in the Ural, it is met with only in a gravel consisting of serpentine, and is associated with chrome-iron ore, of the same kind as that occurring in the serpentine rock at that place, so that it is very probable the platinum originates from this rock.

The chief localities where platinum occurs, are the eastern and western declivities of the Ural mountains; the provinces of Matto Grosso and Minas Geraes in Brazil, as well as other parts of South America, Burmah, Borneo, and St. Domingo.

It generally occurs as small grains, or nuggets, seldom pure, but combined with iron, palladium, iridium, rhodium, osmium, etc. and associated with granules of gold, osmide of iridium, titaniferous iron ore, chrome iron ore, &c.

The extraction of platinum from these mixtures, and its separation in a pure state from the other metals with which it is combined, is always effected in the wet way. For this purpose, the native platinum is heated with three times its weight of hydrochloric acid, and an equal weight of nitric acid added portionwise from time to time, until nothing more is dissolved, care being taken that the vapour evolved meanwhile is carried away into a chimney, or condensed in a receiver, because it generally contains osmic acid, resulting from the oxidation of osmium, which exercises a very irritating influence on the lungs and eyes.

When the whole of the acid has been added, the mixture is heated long enough to separate all excess of acid, and evaporated until the liquid becomes syrupy and solidifies when cooled. The residue is then dissolved in a small quantity of hot water, and if the solution has a smell of chlorine, owing to the conversion of bichloride of palladium into protochloride, it must be boiled until this smell has disappeared, and if meanwhile a precipitate separates, it must be dissolved by hydrochloric acid.

The insoluble residue is then separated by filtration, and again treated in the same manner, until the acid no longer acquires a brown colour; it then appears as a black powder, consisting of osmide and oxide of iridium, sand, &c.

The clear solution thus obtained will contain platinum, palladium, iridium, rhodium, and small quantities of some other metals, in the state of chlorides. It is mixed with an excess of a saturated solution of chloride of potassium, the yellow precipitate produced is collected upon a filter, and washed with saturated solution of chloride of potassium, until the filtrate no longer shows signs of containing iron, by giving a blue precipitate with ferrocyanide of potassium. This filtrate contains the whole of the palladium and rhodium, part of the iridium, and some platinum, together with iron, copper, &c. The precipitate, consisting chiefly of the double chloride of platinum and

potassium, together with some double chloride of iridium and potassium—is dried, mixed with twice its weight of dry carbonate of potash, and heated in a crucible until the mass has become black throughout, and begins to melt. By this operation, the double chloride of platinum is decomposed, so that metallic platinum remains in a spongy state. The double chloride of iridium is also decomposed, but the iridium remains in the state of sesquioxide, that is not soluble in acids. The mass is then digested with water to separate the alkaline salts, and afterwards with dilute hydrochloric acid, to remove the alkali adhering to the oxide of iridium. The residue of metallic platinum and oxide of iridium is washed with water, dried, and then digested with warm dilute nitrohydrochloric acid, which dissolves most of the platinum. This solution is mixed with chloride of ammonium, and the yellow precipitate produced, when washed, dried, and ignited, leaves a residue of platinum. The solution still contains some double chloride of platinum and ammonium, which may be obtained by evaporation to dryness, drying and igniting the residue.

Some platinum also still remains mixed with the oxide of iridium and is to be extracted by means of stronger nitrohydrochloric acid, mixed with some chloride of sodium, to prevent the conversion of bichloride of platinum into protochloride, evaporating to dryness, then dissolving in water, and washing the residual oxide of iridium with a weak solution of chloride of sodium, which prevents its passing through the filter. The solution of platinum thus obtained, contains some iridium, and must therefore be treated with chloride of potassium, and the double chloride heated with carbonate of soda as before, for the purpose of separating the iridium.

The spongy platinum obtained by igniting the double chloride of platinum and ammonium is generally reduced to a coherent mass by compression and hammering, advantage being taken of the fact that platinum resembles iron in its capability of being welded. In the Russian mint the spongy metal is powdered in a brass mortar and sifted; the powder is then placed in a cast iron cylinder and compressed by means of a piston forced down by a press. The rod of platinum thus produced is then heated to redness for the space of thirty-six hours in a porcelain-furnace. During this time it contracts considerably, and the bar becomes perfectly malleable.

Platinum prepared in this way is harder than copper, softer than silver, possesses great tenacity, and, next to gold and silver, is the

most ductile metal. When pure it is perfectly malleable. Its density as estimated by Faraday and Stodart is 21.25. Until recently platinum was regarded as almost infusible, and only small pieces had been more or less imperfectly melted by the flame of the oxy-hydrogen blowpipe. M. Deville has, however, directed his attention to the melting of platinum, and has succeeded in effecting it on a very much larger scale. In the instances in which platinum seems to have been melted previously, it has been probably combined with silicium derived either from the fuel or from the crucible, and has thus been rendered brittle and incapable of being worked under the hammer. To obviate this, M. Deville used crucibles made of lime, and he has found that by this means he is able to melt platinum, very readily, and also that it is very much improved in its character by this treatment. Thus for instance he states that it is more malleable, and unlike the metal prepared by compression of the sponge and welding, it is not porous.

The furnace employed by M. Deville for melting these metals, requiring very high temperature, consists of a baked clay cylinder, *see page* 286, EE, seven inches in diameter and ten inches high, resting upon a disc F, of cast iron, perforated with holes at its edges, one fifth of an inch diameter. Underneath this is a basin-shaped vessel B, of cast iron, with a flange upon which the clay cylinder and disc rest, and at one side of this basin-shaped vessel is a tubular projection, which admits of being connected with a powerful blast apparatus. The crucibles, A,C,D, are made cylindrical, with the bottoms two inches thick, and are placed upon the cast iron disc: the fuel used is small cinders, about the size of large nuts, well separated from ash and clinker. At first, some ignited charcoal is put into the clay cylinder round the crucible, and the remainder is filled up with cinders. A blast is then set up, and gradually increased, the fuel being pushed down meanwhile with an iron rod, and the cylinder kept quite full until the requisite temperature is attained; and then the blast is kept up until the whole of the fuel is burnt. During the whole time, the fuel at the top remains quite cold, and the highest temperature is produced in a zone about one inch above the iron disc, and extending upwards about three inches. Above this zone the temperature decreases rapidly, in consequence of the conversion of carbonic acid into carbonic oxide, which burns with a flame six feet long. The principle upon which this furnace is constructed, is that of accelerating the combustion by rendering the surface of the fuel as great as possible, and producing

the greatest heat in a zone that is very broad in proportion to its height.

The crucibles used in this furnace are made either of lime, carbon, or alumina, according to the nature of the substance to be operated upon. The lime should be well burnt and slightly hydraulic, and is cut into pieces three or four inches thick, five or six inches high, and hollowed out at one end conically. In using them, care must be taken to raise the temperature gradually so as not to crack them.

Carbon crucibles are made from the hard graphitic deposit from the interior of gas retorts. They are turned upon a lathe, and should never be more than four inches high, or have the bottoms so thick as the lime or alumina crucibles. When used, the carbon crucibles must be placed within a lime crucible, or an earthern crucible of the same cylindrical shape, with the intermediate filled with ignited alumina pressed down tightly.

The alloys of platinum with other metals have not been so fully studied as would be desirable, and the accounts given of them are sometimes conflicting. With twice its weight of zinc it gives a bluish white, very hard metal, that is easily fusible, and oxidizes when heated to redness. With tin it gives brittle hard alloys. With an equal weight of iron it gives a brilliant alloy that is very hard and malleable, and resists the file; an alloy of iron with one hundredth of platinum is not acted upon by nitric acid. The alloys of platinum with steel, in various proportions, have been examined by Faraday and Stodart; some of them are very tough, and applicable for cutting instruments. With an equal weight of copper, it gives an alloy that has the colour of gold; is malleable, and not oxidized by exposure to the air. The alloy of seven parts platinum, sixteen copper, and one zinc, has the colour of gold, is easily rolled, does not tarnish, and is not acted upon by boiling nitric acid. When it contains a small portion of iron, it is malleable. Platinum sponge may be combined with mercury by rubbing them in a warm mortar with water or acetic acid; or the amalgam may be made by rubbing moist double chloride of platinum and ammonium with half its volume of sodium amalgam. With silver, it gives an alloy that is much harder than silver, and dissolves entirely in nitric acid. The alloy of equal parts of gold and platinum is very malleable, and has the colour of gold.

With regard to the alloys of platinum with analogous metals, very

little is known with certainty. It is stated that a small amount of iridium alloyed with platinum reduces its ductility but increases its hardness. Berzelius found that an alloy of platinum with a few hundredths of iridium was much harder than pure platinum, less fusible and less readily affected by chemical re-agents. Gaudin describes an alloy of platinum with one-tenth iridium as very malleable, and capable of being hardened.

Platinum alloyed with an equal weight of palladium yields according to Chenevix a grey metal equal in hardness to wrought iron, less ductile than platinum, and having a density of 15.14.

The alloy of platinum with an equal weight of gold is very malleable, and has almost the colour of pure gold. M. Deville has prepared an alloy, containing, besides platinum, both rhodium and iridium, which after being melted, was perfectly malleable and ductile, while at the same time it possesses a remarkable stiffness. This alloy was obtained directly from the native platinum by the following method, for which a patent has been taken out in this country by M. Debray.

In the first instance the native metal is reduced to fine powder, and mixed with lime, baryta, strontia, magnesia, or the corresponding carbonates. This mixture is roasted with access of air, by which means it is deprived of the greater part of the osmium it contains. It is then melted in vessels lined with lime, baryta, magnesia, &c., the fusion being effected by means of gas burnt with oxygen. The furnace employed for this purpose is analogous in form to a cupellation or reverberatory furnace, furnished with tuyeres for conducting the gases into it.

The platinum obtained in this way is alloyed with the other metals existing in the native metal, with the exception of the osmium, which is volatilized. The osmides resulting from the ordinary method of treating platinum, and which constitute that portion of the ore which is not dissolved by nitrohydrochloric acid, may be worked in a similar manner with lime, and the metals they contain may be in this way separated from osmium, and obtained in a melted state, while the foreign metals, such as iron, chromium, &c., are oxidized, and absorbed by the lime with which the material is mixed, or by the substance of the crucibles in which the fusion is effected. The lime crucibles used in this operation appear to exercise a remarkable purifying influence upon the metal, which becomes as soft as the finest copper. It is very probable that this method may be the germ of a new sys-

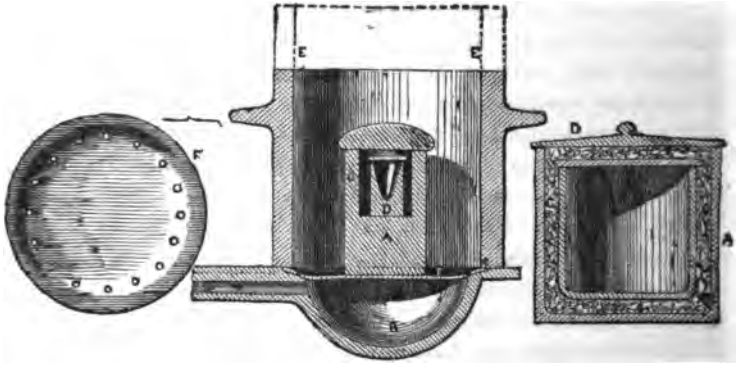
tem of working platinum, and that it may be a means of reducing the cost of the metal.

Another important fact mentioned by M. Deville is, that an alloy of platinum with thirty per cent of rhodium, a metal frequently associated with native platinum, could be easily worked after fusion and refining, and that it is not acted upon by nitrohydrochloric acid, as platinum is.

The separation of platinum from other metals with which it is alloyed, may be effected with tolerable ease. From silver it may be separated by boiling the granulated alloy with concentrated sulphuric acid, which dissolves silver and leaves platinum, which may be purified by solution in nitrohydrochloric acid, and precipitation as double chloride of platinum and ammonium, after the separation of chloride of silver. From gold it may be separated by melting the alloy with three times its weight of silver, and parting with nitric acid in the usual manner. In this case the platinum is dissolved by the nitric acid, and may be obtained as double chloride, after the silver has been precipitated and separated as chloride, from the solution. Or the alloy of gold and platinum may be dissolved by nitrohydrochloric acid, and the gold precipitated by sulphate of iron, which does not precipitate platinum.

From other metals platinum may be separated by boiling the alloy with hydrochloric or nitric acid, then dissolving the residue by nitrohydrochloric acid, and precipitating the platinum as double chloride of platinum and ammonium, by adding chloride of ammonium to the solution.

FURNACE OF MR. DEVILLE, REFERRED TO AT PAGE 283.



CORRESPONDENCE.

THE APPLICATION OF GALVANISM TO THE EXTRACTION OF TEETH.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—I thank you for the insertion of my last communication from Dr. Berry, of Philadelphia, entitled, "A Letter of Enquiry respecting the Application of Galvanism to the Extraction of Teeth." Judging from the contents of the second, and enclosed letter, from the same gentleman, I should feel disposed to recommend it to the serious consideration of the profession generally, as a subject of considerable interest and importance, and by your kindness in giving it publicity, the subject will undoubtedly become a popular one.

The letter I have just received, and I hasten to forward it to you at once.

Believe me, yours truly,

Hull, August 18, 1858. J. W. DAVENPORT.

731, Spruce Street, Philadelphia,
Pennsylvania, U. S. July 28, 1858.

DEAR SIR,—Your polite favours were received yesterday, for which please accept my most sincere thanks.

I am delighted to find, that my former communication possessed sufficient interest to induce you to give it your valuable consideration.

I am somewhat disappointed to find, that the application of Galvanism for the purpose referred to, is not known to the profession in England, but the next issue of the Quarterly Journal of Dental Science, may possibly bring something to light on the subject.

In the meantime I would state, that we find it to work admirably. Persons who have been suffering for years from diseased teeth, dreading the excruciating pain from having them extracted, and also dreading the evil effects of chloroform, will now sit down quite composedly and have from fifteen to twenty teeth and stumps taken out in half-an-hour, thereby preventing much delay, which will invariably be met with by the old process.

And my experience enables me to assert positively, that eighteen

out of twenty declare, that they feel no pain worth speaking of, and many say they feel no pain whatever.

I will now endeavour to explain to you, the *modus operandi*. I have two kinds of battery, one, a large, powerful, and very beautiful instrument, but unnecessarily large and expensive for the purpose under consideration; the other, and the kind in most general use, is a small sized ordinary electro-magnetic machine, (almost any kind of galvanic battery will answer,) having two flexible cords, in preference to the usual copper wire, terminating in metallic cylinders or handles, the positive and negative poles. I prefer having the apparatus placed on a small stand immediately behind the operating chair. All things being prepared, and the patient seated, the positive pole is placed in his right hand, and the negative in his left, or *vice versa*; the current is then allowed to pass very gently at first, gradually increasing the intensity, in order to test how much he can conveniently bear (it is not necessary to have it very strong); when that is ascertained, the poles are removed, the handle taken off the positive (or negative), and the forceps, elevator, or other instrument attached in its place, by means of a small hook on the cord and ring on the instrument, or by simply twisting the cord around it; the forceps are now applied to the tooth, and when properly adjusted, the other pole is immediately placed in the hand of the patient by an assistant, when by an expert manipulation, the offending member is expelled without giving him time to utter a word of protest.

On looking over the Journal which you were kind enough to send me, I there find some remarks on page 175, by Mr. John Humby, in relation to taking impressions. Mr. Humby mentions the difficulty that is frequently met with on taking them in plaster of paris, on account of the time it requires to remain in the mouth; you will find that can be obviated, by dissolving a teaspoonful of common table salt in a half tumbler of water for mixing your plaster, causing it to set very quickly.

Yours, most respectfully,

JAMES W. BERRY.

THE EXAMINATION QUESTION.

SIR,—I very much regretted to see a protest signed by seventy-four Members of the Profession, inserted in the British Journal of Dental Science. I had hoped, that respectable Members of the Profession would have seriously considered the consequence of excluding

800 of their Professional Brethren from joining a National Dental College!

None of those gentlemen ever went through a Dental Examination themselves, and consequently had no right, in principle, ever to demand the examination of an established professional brother, upon and by the power which some few of them possessed of making an unjust and illiberal by-law. If the Dental College had been a private club, well and good; make personal laws if you please, but do not let some few gentlemen in council take upon themselves to legislate for a professional body of some 1500 persons, so as to exclude 800 or 1000 out of them! I say exclude, because I do not suppose a single established Dentist would ever submit to go through an examination by the order of men who had never been examined themselves.

The Protest has a singular appearance in print; it looks as if it was only a Protestation against the infringement of certain laws regarding the election of Council; but if we are to understand Mr. Underwood's introduction to this Protest, these very seventy-four protestors would have quietly allowed the new Council to have stood without molestation, had they been as illiberal in professional feeling as the signers of the Protest, *i. e.* insisted that the 800 Members of the profession should be examined before they were permitted to join a College commenced upon independent principles.

I regret, I say, to see our brethren of the profession signing such an exclusive and illiberal document: of course we shall now expect and require, that all of these gentlemen present themselves at the London College of Surgeons, and go through the proper curriculum to entitle them to the designation of Surgeon Dentists, or for ever hold their peace in regard to independent principles and professional union.

ONE OF THE EIGHT HUNDRED OUTSIDERS.

August 1858.

P.S.—May I also be permitted to say to the great body of the profession, who have been quietly waiting to see the elements of disunion settle down into something like peacefulness of practical action—have patience yet a little longer, watch and wait, and justice and progress will go hand in hand.

THE NEW MEDICAL ACT.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—I have long been too painfully alive to our very anamolous position as Dentists in the United Kingdom, but never so completely disgusted with our status, as, after perusing the several clauses inserted in the Medical Bill so recently passed the House. Of what can the Editor of the British Journal of Dental Science be thinking, when he states, we have cause for rejoicing in, that Dentistry has been "raised from a questionable position." What can he mean! nay, rather let us half-mast our flag, say I, for certainly now our looked-for status must be defunct. In the first place, examination not being compulsory, no decided protection from that source is left us; as will be seen by Clause XLVII, wherein it authorises the College of Surgeons to examine and grant certificates of fitness to those who may be desirous of being examined. Again, what is our rank and position in Clause LIV? Why, until I read this, I did think we were, at least the connecting link between Surgeons and Chemists! but, upon my word, it puts me in mind of a placard I remember seeing when a boy, on a certain nobleman's estate, which ran thus—"No dogs or midshipmen allowed." Once more, this Clause does not protect us, only so far as the same shall extend to selling and compounding, or dispensing medicines; whereas, we are distinctly told in Clause XXXI, that, "no person shall be entitled to recover any charge, in any court of law for any medical or surgical advice, attendance, or for the performance of any operation." Here is a pretty state of things: I want to know, sir, what we are to do? for it seems to me, we are out of the frying-pan into the fire. An enlightenment on this subject will greatly oblige,

Yours, &c.

August 1858.

A STANCH M. C. D. E.

MR. SIDNEY LONGHURST'S PAPER ON CONGELATION.

SIR, - I beg to call your attention to the following slight inaccuracies in your report of my paper on Congelation.

Page 204, line 12, for "other," read "others."

Page 205, line 19, omit inverted commas after "years."

Page 207, line 5, for "W. Field," read Mr. Field.

52, Southampton Row,
Russell Square, August 31, 1858.

Respectfully yours,

SIDNEY LONGHURST.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—As one of the few licensees for using the patent apparatus for the application of congelation in the extraction of teeth, and thereby producing a painless operation, perhaps you will be good enough to permit me to offer a few remarks upon a paper read by Mr. Sidney Longhurst at the College of Dentists of England, May 4, 1857, on which occasion I was accidentally absent, and thereby deprived of the opportunity of joining in the discussion which followed. I have used the process daily, with few exceptions, for nearly twelve months, and was therefore more competent to speak upon its "merits and demerits" than any one who spoke upon the subject after the lecturer. I have not the pleasure of knowing Mr. Longhurst, and my only information on his paper is from your last number of the Quarterly Journal. Under these circumstances, I think I am called upon, in candour to the profession, the proprietors of the patent (Messrs. Horne and Thornthwaite), and that portion of the public who may have read your report, to give my opinion on the subject, and this must be my apology for intruding upon your valuable space.

In the first place, the author proposes to give "a clear and concise exposition of the real value of congelation in dental operations." Now, I think the conclusion to which any reader unacquainted with the subject would arrive, will be, that he simply "damns it with a faint praise." He gives you his opinion merely, and ignores altogether those of all previous authors, and any others "who may not be tardy with their replies and hostile criticisms." He says—"These I fear but little, and shall heed less; in full confidence, that if they restrict themselves to a truthful representation of facts, fairly deducted from their entire practices, not sounding loudly a few successful cases, and carefully consigning the rest to oblivion, their experience will tend only to corroborate my own." I shall endeavour to shew, that my practice brings me to a different conclusion upon the "merits and demerits" to that at which Mr. Longhurst arrives; and, in doing so, I shall be quite as heedless of the opinions given without experience as he is of all others, whether they have tried it or not, equally confident, that as "the proof of the pudding is in the eating," those who give the principle a fair trial will agree with me, that the merits far outbalance the demerits of congelation for the purpose in question. That difficulties exist, and, perhaps, in some cases insurmountable

ones, is only in accordance with the natural constitution of all things human: perfection is unknown.

After detailing a few cases and describing the process, Mr. Longhurst says:—"From these cases it may be inferred that congelation is useless. Such an impression I should be sorry to give; but, that in many cases it is useless—nay, more, that in a few cases it is even worse than useless, I hesitate not to affirm. For the robust and vigorous to use it for the extraction of a tooth, I consider it an idle farce; for the weak and shattered invalid, a grateful boon."

"In all cases of extraction, an alleviation of the ordinary pain may be confidently promised and expected. When I say, that in a few cases it is useless, and worse than useless, I infer, that the amount of pain abrogated in some instances is so trivial, as to be quite inadequate to the extra inconvenience, disappointment and expense, and sacrifice of time."

How can we reconcile these two paragraphs? "Such an impression" he does give; and he concludes his paper by saying—"I have shewed it you in its brightest, and in its dullest colours—its fairest, and its ugliest aspects; and it is only my regret, both for ourselves and our patients, that its "merits" and its "demerits" are not more evenly balanced."

What conclusion else can we arrive at, but that he considers the "demerits" outbalance the "merits?" Such is the "impression" I should get from reading his paper, and such I venture to affirm would be the "impression" made upon any impartial reader. Let me ask, "is it nothing (to use some of his own language) that it is most powerful and most useful where most needed, viz.—enfeebled and nervous constitutions—for the weak and shattered invalid a grateful boon," and, "in all cases, an alleviation of the ordinary pain may be confidently promised and expected?" To all of which I can bear most unhesitating testimony, from the experience in a large number of cases.

Surely this is worth a great amount of "extra inconvenience, expense, and expenditure of time."

Every dentist knows, that many persons dread the extraction of a tooth, to use their own expression, "worse than the amputation of a limb," and who bear the pain and loss of health consequent upon diseased teeth for years rather than submit to the operation.

Such cases have come under my observation; and is it not a "grateful boon" that such can and do have an "alleviation" of the

"horrid wrench" sufficient to induce them to submit to the operation? But I do not stop here; my firm unbiassed opinion is, that nearly all cases can be made quite painless. And here I must remark, that Mr. Longhurst has omitted to mention one very important point, that is, that very much depends upon the way in which each particular case is treated by the operator, and that each must be treated according to its peculiar circumstances.

We all know that no two cases are exactly alike, and much is dependent for success on the judgment and management of the dentist. Here then may be found a fruitful source of failure in many cases of complete success, for "who is infallible?"

Again, I am far from convinced that our apparatus is perfect. I have an additional tank of warm water attached to the refrigerator, whereby the cooling down process is continued for any required length of time, which addition is perhaps unknown to Mr. Longhurst, as he makes no mention of it.

I am also convinced that many other improvements can and will be added to the apparatus, when the subject receives more attention, and our experience suggests them, necessity being proverbially the "mother of invention." I could quote a large number of valuable testimonials, to prove that my view of the case is as likely to be right as that of our author, and I feel called upon, in justice to the profession and the public, to give expression to them through the same medium, viz. the columns of the "Quarterly Journal of Dental Science." I might have furnished you with cases from my note book, and have extended my remarks to a much greater length, but I am afraid I have already trespassed too far, and now only remark, *en passant*, upon the discussion which followed the reading of the paper, that it tends to confirm my views. I must, however, mention that Mr. Mackenzie has come to an erroneous conclusion, simply from his want of experience, which he candidly acknowledges, and that I have never seen or heard of any case of "after effects of an unsatisfactory nature," but instead of that, that the whole process is perfectly free from danger of any kind. And this cannot be said of any other anæsthetic of which I am aware.

In conclusion, I am willing to admit, that the process is troublesome to the operator, and involves the expenditure of time and money. For these reasons alone it will never become universal; the majority of practitioners cannot spare the necessary amount of attention, and the majority of patients will not take the trouble and go to the ex-

pense ; yet neither of these results militate against the principle of congelation, or prevent me in the least from asserting, that it is a scientific, beautiful, and successful adaptation of nature's laws for the mitigation of human suffering.

I hope you will allow me to add, that I shall be very happy to receive a visit from any of my professional brethren, and by giving them all the information in my power, enable them to judge of the "merits" by every inquiry into the principle of congelation, and by seeing for themselves, not be left to conjecture upon mere theory.

I remain, Sir, yours very truly,

Edwin Williams.

21, Southampton Street, Bloomsbury Square.

THE TEETH OF PAST AND PRESENT GENERATIONS.

Mr. Perkins *versus* Mr. Horne.

To the Editor of the Quarterly Journal of Dental Science.

Sir,—I find in perusing your July number, that the profession and myself have been favoured with an effusion from the brain of Mr. James Horne, of Glasgow, and which effusion he has been pleased to designate as an answer to Mr. Perkins. Now, having read the production very carefully through, I have come to the conclusion that Mr. Horne has not answered Mr. Perkins at all, but that on the contrary, he has introduced a quantity of totally irrelevant matter, and has principally preached from a text of his own composing. Mr. Horne takes as his point of attack, these words from my paper :—"I think that having shewn that health and longevity have improved, we have a right in absence of proof to the contrary, to assume that teeth have also improved ; if they have not, it speaks but little for our Profession generally." Having so far quoted me, he ventures an impertinent remark about the ignorance or intelligence of the profession ; upon which I will merely observe, that if we are to judge of the intelligence of the profession, by Mr. Horne's method of answering an assertion, I am afraid that the estimate will be a very low one ; if we attempt to measure the ignorance of the profession by the same standard, doubtless the estimate will be unflatteringly high.

When an individual undertakes to answer an assertion or question, he should first take good care to understand the question or

assertion to be answered; Mr. Horne has evidently overlooked this important part of the business in his eagerness to inform the profession and the public that he has visited certain foreign countries, and in his hurry to shew

> "How much the fool who's been to Rome,
> Excels that fool who stays at home,"

has entirely lost sight of the question contained in the few words he has chosen to quote from my paper. Now let us see what the question is. I say that having shewn that health and longevity have improved, we have a right in the absence of proof to the contrary to assume that teeth have also improved. It is, or should have been the business of Mr. Horne, if he doubted the truth of my assumption, to have produced proofs to the contrary. Has he done so? Has he shewn that as the general health improves, the teeth deteriorate? Has he shewn that men live longer the more unhealthy they become? Is he prepared to prove that the average duration of life at the present time is less than it was three hundred, or even only fifty years ago? I don't think that he has demonstrated either the first or second case, and I am very certain that he cannot prove the third. Again Mr. Horne says, "what becomes of Mr. Perkins's theory and deductions, that as longevity in cities improves, teeth must be better." Mr. Horne does not understand what he has read, or he would not attribute such a theory to me; I have not written anything of the kind. I have chosen to take *one* ancient city where statistics are sufficiently clear to prove that the average duration of life is double what it was three hundred years ago; but I have not attempted to draw any comparison between city life and country life, or between city teeth and country teeth, such a comparison being in my opinion unnecessary, the general health being of more consequence than the place of residence; and I believe that unhealthy children and unhealthy men and women are found both in town and country; but I say that as longevity has increased, mankind must he healthier than they were formerly, and if so, we may reasonably assume that their teeth have also partaken of the general improvement. If Mr. Horne will take the trouble to read the second paragraph of page 18, in the *Quarterly Journal of Dental Science*, for April last, he will find in what manner I account for the general improvement that has taken place in the health and life of mankind; thus I say: and if we search for information in the social history of mankind, we shall find that it has resulted from a better knowledge of the wants and necessities of

human nature; improved surgery, improved medical knowledge, cleanliness in the place of filth, better feeding, clothing, and housing; in short by doing all to preserve life, instead of ignorantly or carelessly allowing disease to arise, increase, and carry off its hundreds and thousands; where with a proper knowledge properly applied, tens and hundreds would have sufficed. Has Mr. Horne anything to say against this? Have I not written these words? Then by what right, or with what consistency can Mr. Horne charge me with being the patron or defender of "miasmatic wynds, courts and alleyed cities?" (See his answer, page 167 of *Quarterly Journal* for July. He says "*my* experience proves to me, that teeth are worse than they used to be." *Used to be!* What does that mean? Does it mean last year, last century, or five centuries ago?

He also thinks that if Mr. Perkins is an old practitioner, and has had much to do with children's teeth, he will admit the fact? Well, Mr. Perkins is a tolerably old practitioner; indeed, he was in practice long, long, before a certain Mr. James Horne came to live in the Edgeware Road, and which circumstance Mr. James Horne of Glasgow may probably recollect; he, Mr. Perkins, has also had a considerable share of practice with children's teeth, and has found with very, very few exceptions that where the children's teeth were diseased, one or both the parents had also suffered from bad teeth. If Mr. Horne is not prepared to admit this as a general fact, I do not attach much value to the "*my* experience" which he so modestly puts forth. He further asks "what do almost all dentists affirm from their experience, whether in England, Scotland, France, or America? Why, that the teeth of the present generation are much worse than their fathers'." He then proceeds to say that "as we cannot get at teeth statistics, we must be content with the experience of dentists, medical men, and the parents of these children;" and then he goes all round the world for references, and concludes that teeth are worse than they "used to be."

Now to the first part of this extract, I will observe, that almost *all* dentists do *not* affirm anything like what Mr. Horne has charged them with. There are *some* dentists like some other men, who will affirm that which is neither proveable or probable, but I should be very sorry to think that almost *all* dentists would do so; even Mr. Horne himself admits that his assertion is not proveable, for he says, "we cannot get at teeth statistics;" and for any *one* dentist to speak with certainty upon such a matter, he would have need of at least

sixty years practice, to which he must have added during that practice a very correctly-kept statistical account of the teeth of all families he had attended during that period; he must in short have attended to the teeth of at least three generations of the same families, and have carefully noted all that related to them regarding their disease, stating the age, at which disease commenced, the description of tooth diseased, as well as the nature of the disease; he would by these means be enabled to make comparisons between the first, second, and third generation, noting whether an improvement had taken place at the latter period, or otherwise; and whether that improvement or deterioration had occurred, consecutively or alternately: if consecutively, he might then speak with some little confidence of *his experience*, providing he had met with many cases which shewed the same consecutive improvement or deterioration. But supposing that the alteration experienced through three generations was alternate in its effects; then the result would amount to nothing as far as his observations were concerned, except that his experience had given no positive result at all. Whether Mr. Horne can boast truly of anything like the experience which I have here described, I think I may without presumption, doubt; particularly as he has spent so much time in travelling.

I have already stated, and a perusal of my paper will prove, that I have made no comparison whatever between city teeth and country teeth, and, therefore, what Mr. Horne has chosen to say about taking advantage of my theory to prove an assertion made gratuitously and irrelevantly by himself, I shall take no further notice of, than to say, that after reading his answer, I should not have been surprised had he introduced the Russian war, or any other subject, equally bearing upon the case in point, as a part of my theory. I will not take much notice of his statistics either, as they really have nothing whatever to do with the case under discussion, though had they been intelligibly given, they might have been interesting; but, in the name of all that is wonderful, what does Mr. Horne mean by only one person out of fifty-seven dying in the healthy country districts of England, one out of forty-one in London, and one out of thirty in Liverpool? Does he mean that fifty-six persons of every fifty-seven born in the healthy country districts, live for ever? And that the same doctrine applies to London and Liverpool, only in a different ratio?

The virulence with which he attacks civilization is very amusing, but not less amusing than his definition of it. I have in my paper

alluded to the doubtful advantages of the savage, or uncivilized man over his civilized fellow creature; I have mentioned something about a battle-field in South Africa, where savages had slain each other; but I should never have thought of going to "Connaught in Ireland, or to wooded Windermere, in Cumberland," or, in short, to any agricultural district in England, Ireland, or Scotland, to look for savages; nor do I think that the inhabitants of the various districts which our travelling author has alluded to as being savages, will feel much flattered by the compliment, although he says that their savage teeth are so much better than "your boasted refined civilized teeth." I hope your readers generally will be able to bear up against the cutting sarcasm directed by Mr. Horne against civilization, and that none of them may be induced to turn savages, in the hope of improving their teeth.

Mr. Horne has also the very remarkable idea of country teeth and ancient teeth being one and the same thing. He says, for instance, after having scattered to the winds all ideas in favour of "your boasted refined civilized teeth," "why I speak thus strongly in favour of country teeth (or ancient teeth, if he likes it better) is, because, since 1842, I have paid some little attention to city *versus* country teeth;" and then he tells you where he travelled in France in 1843 and 1844, and wherever he had the opportunity of seeing town and country teeth, or asking questions on the subject of medical men, he invariably found country teeth better than town teeth.

The part relating to town and country teeth I have already disposed of; but the connection between country and ancient teeth is somewhat difficult to understand: the two appellations are surely quite distinct. I suppose Mr. Horne will not tell us that there are no ancient teeth, both in town and country; what then has ancient teeth to do with country teeth, more than with town teeth, or why should I like one better than the other? Really, Mr. Horne is a very funny man, and such a traveller, too. He says, "for other proofs (forgetting that he has not produced any at all), let us glance at America. Are the teeth of even adults, say nothing of the children of New York, Philadelphia, Baltimore, Washington, Boston, &c. equal to their ancestors? Let them shew you their artificial teeth as an answer." Now, does Mr. Horne in sober earnestness think that any man, being asked the absurd and monstrously ridiculous question, are your teeth equal to your ancestors two hundred years ago? That that man, being a sane man, would show his artificial teeth as an answer? Ridiculous,

Mr. Horne; he would not do anything of the kind; but if he deigned to answer such a question at all, he would tell the truth, and say, I really do not know: how should I?

Again proceeding in the same strain, he says, "If we could but see the children of the pilgrim fathers, or colonists, when Raleigh, Lane, Baltimore, and others, colonized Carolina, Virginia, Maryland, New England, &c., and compare them with the fearful teeth of New York and other cities, it would, I expect, give quite sufficient answers to your lovers of modern teeth." Here we are again, uttering nonsensical impossibilities; *if* we could see them, we should be able to compare them with the teeth of the present generation; but we cannot see them, and therefore cannot make any comparison between the two; and, consequently, neither Mr. Horne nor Mr. Hoof can possibly know anything about the matter. We are next treated to a few more statistics about America, and what number of people there is likely to be in America in 1950, which he concludes somewhat dolefully, as follows:—"What will their cities then be, and what their teeth, if we are to judge by what they now are?" To which I beg to reply, that we really cannot say.

I think that I have now pursued, or followed Mr. Horne's answer somewhat further than was necessary, to shew that he has either not understood the question he had undertaken to answer, or, that he has purposely made use of my paper to introduce a compendious account of his own travels; I will, therefore, now take my leave of it; but before I conclude, I hope, sir, you will bear with me while I make a few remarks upon some of the topics introduced by Mr. Horne into his answer.

Mr. Horne speaks with great contempt of civilization; and, though it is scarcely possible to understand what he means by civilization, yet it would appear that he considers it to consist in the accumulation of human beings in cities, combined with all kinds of dirt and disease; with the follies, extravagances, and all the common sins against health which are practised by human beings in all parts of the world, but particularly in cities: there being, generally speaking, more facility and more temptation to excess of every kind in those places than elsewhere. Now to take such a view of civilization is simply to represent the *abuse* of a good thing as the thing itself, and to ignore its use and goodness entirely: almost as reasonably might we represent the cane applied to the offending schoolboy's back as sugar, and the smart that he feels therefrom, as

its sweetness: which would most likely have the effect of producing in the mind of the school-boy as much dislike for sugar, or anything sweet, as Mr. Horne seems to entertain for civilization: but as in the one case there is misconception, and in the other misrepresentation, neither the one nor the other gives the correct idea of the object under consideration. I think I may assert, without fear of contradiction, that there is no one good or useful thing found naturally, or introduced by the contrivance of man into this world, but what may be by abuse turned into a curse instead of a blessing, or become the source of misery and trouble to its possessors. I believe that it is absolutely impossible for anything capable of producing good not to be equally capable of producing evil, if used in an improper way. In short, that which is perfectly harmless is perfectly useless—I do not know of any such thing. Were I to be asked the question—In what does civilization consist? The reply to be a full one would be a very long one: I would, without attempting to go fully into the question, suggest as the first element of civilization—kindness and consideration for each other. The next, would be the art of conversing by symbols, or in other words, reading and writing, from its simplest to its most elaborate forms; mechanics, theoretical and practical; navigation, and the sciences upon which it depends; chemistry; medicine—in short, all the sciences form a part of, and are the offspring of civilization.

To enumerate all that springs from these elements, would almost be impossible in a volume, therefore entirely out of the question in a letter; suffice it to say then, that most of the necessaries, conveniences, and luxuries of life, owe their existence to the effects of civilization: but the abuse of these advantages arises from the want of civilization in the minds of those who make so bad a use of them. Dirt and disease in cities are no more absolutely unavoidable, or necessary to the existence of cities—than that dirt, filthy habits, and disease, are impossibilities with country life; indeed a very great portion of the dirt and consequent disease in cities, I believe arises from the same habits being practised in towns, as people commonly practice in the country, without producing disease, or any particular inconvenience; the difference of the two cases being an accumulation and a nuisance in town, against a beneficial application of the nuisance material to the surface of the earth in the country.

Having said so much, to shew Mr. Horne that civilization is not an enemy to health or good teeth either, although its abuses are ene-

mies to both, I will conclude with hoping, that the next time Mr. Horne attempts an answer to an assertion, or question, that he will take the pains thoroughly to understand what he is going to answer; and further, that if he quotes anything in a foreign language, that he will understand *that* also, or get a correctly printed volume to copy from. I am, Sir, your obedient servant,

Maida Hill. William Perkins.

August 1858.

MR. PATRICK AND THE COLLEGE OF DENTISTS.

To the Editor of the Quarterly Journal of Dental Science.

Sir,—I have just been reading the "Origin and Development of the College of Dentists of England," in the College Transactions for 1857, and am surprised that the name of Mr. Patrick has been entirely omitted from the list of gentlemen appointed as a provisional Committee for the formation of Laws, &c., for the then embryo College. There may be other omissions which I have not observed: but the one I allude to is so palpable, that I am astonished that the author of the "Origin, &c." should have made it. I was present at the Meeting of the 22nd September 1856, and was also one of the Provisional Committee, and I can, without the slightest doubt of the fact, assert that Mr. Patrick was one of the speakers at the September Meeting, and that he was appointed to act on the Committee; also, that he attended several of the meetings of that body, and finally—that he paid his fair share of the expenses necessarily incurred in carrying out the duties of the office which he had been requested to fill. He ought, therefore, to have been placed in company with those gentlemen whom the author of the "Origin, &c." says, "liberally contributed with their purse, as well as time, to the promotion of the end in view." As, however, his name does not appear in the list, I think it only fair that the fact should be generally known.

Trusting that you will oblige me by the insertion of the above, I hope to see the motto of the author of the "Origin, &c." fairly carried out—namely, Honour to whom honour is due.

London, September 1, 1858.

ERRATUM IN REPORT OF MR. RYMER'S PAPER ON IRREGULARITY.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—In your report of the Monthly Meeting of the College of Dentists, held on the 1st of June, I am represented as stating, in the discussion which followed Mr. Rymer's excellent paper on "Irregularities of the Teeth," that I consider such irregularities have nothing to do with articulation; now as my opinion is the very reverse of that stated, I should feel it a favour if you would correct this important error, and put the word *vocalization* for articulation. That which led me to make the remark, was simply this:—Mr. Purland stated, that he had had a case, in which a lady, after having her teeth successfully regulated by him, had acquired several additional notes, and a greater freedom of vocalization; this led me to state, that I was fully convinced, and that my convictions were supported by some of our first musical authorities, that the teeth had nothing whatever to do with the voice in singing, either in its flexibility, quality of tone, or compass; but as the matter was not considered by the President as strictly in order the subject dropped.

I am, SIR, your obedient servant,

FELIX WEISS.

32, Great Russel Street, Bloomsbury Square.
September 1858.

GALVANISM FOR EXTRACTION OF TEETH.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—As many of our professional brethren are waiting to see the results of those parties who are applying the galvanic fluid to remove pain in dental operations, will you allow me to suggest to all persons who make the attempt, that they use a galvanic apparatus, whose currents *can be regulated at pleasure.* If care is not used, both PAIN and SHOCK will ensue, when the instrument is SUDDENLY applied to the tooth and gum. If the conducting wires are also covered with cloth (or some non-conducting substance), nearly up to where you attach the copper wire to the lowest part of the handles of your extracting instrument, and the operator wears a glove on the right hand, not touching the patients, &c., there will be no necessity to stand upon glass, or any other insulating material. As yet all my

extractions have been without pain, although one or two parties have felt GIDDINESS for half-an-hour or so, even after the most GENTLE current had been applied.

I use an apparatus with six charged batteries, and so gradually increase the power, as I may require it, from one to three or four strength. By GRADUALLY applying the current upon the spot, a sort of warm, stunning effect is produced; in most cases NO PAIN, in others, pressure of the instrument is felt: in others, giddiness of head, &c. I have no doubt but that great improvements will be made in the galvanic apparatus, so as to enable us to regulate the flow of the currents at will, and yet have a REASONABLE priced apparatus. But to those parties, if any, who are inclined to use the common cheap electric instrument, let me caution them not to give a sudden shock to the system by applying the charged dental instrument SUDDENLY to the tooth.

In all FIRST attempts, let the operator place the instrument upon his *own* teeth for a minute, before extracting, and he will then understand, perhaps, what I mean by suggesting CAUTION in placing the instrument upon a patient's tooth, and particularly with women and children.

Glasgow. JAMES HORNE.

AN AWKWARD EXCUSE FOR NOT INSERTING AN AWKWARD LETTER.

WE PUBLISH THE ANNEXED CORRESPONDENCE BETWEEN MR. RYMER AND A MONTHLY CONTEMPORARY, WITHOUT COMMENT.

To the Editor of the British Journal of Dental Science.

SIR,—My attention was yesterday called to the list of names purporting to have been attached to the protest handed in by Mr. Underwood, to the President of the College of Dentists, on July 16, printed in your impression for August, and I consider it my duty to inform you, although I do so most reluctantly, that circumstances have arisen which will render inquiry as to the *authenticity* of the signatures necessary. Such a course being due to the very large majority of Members who refused to sign the protest.

Upon reference to the list alluded to, the names of Mr. C. W. Barker and Mr. G. Wilson will be found. Mr. Barker was dead before

the present Council was in existence, and Mr. Wilson has emphatically declared that he never authorized his name to be used. Again, some of the other signatures are evidently in one and the same handwriting.

I think I need not take up your space to comment upon these very remarkable circumstances. I am, Sir,

North End, Croydon, Your obedient servant,
September 4, 1858. Samuel Lee Rymer.

The above letter was not inserted for "reasons" thus given in the Notices to Correspondents:—

"Mr. Rymer, of Croydon.—We doubt whether we should be "justified in publishing your letter; and as it did not arrive until after "our usual date for receiving communications, we had not time to "give it due consideration."

North End, Croydon, September 17, 1858

To the Editor of the British Journal of Dental Science.

Sir,—I am surprised to observe, in your "Notices to Correspondents," that my letter on the authenticity of the signatures to the protest against the Council of the College of Dentists, did not arrive until after your usual date for receiving communications; because the letter was posted here in time for you to receive it on the afternoon of the 4th instant, especially as I see you have published a much longer letter than my own (page 264), dated the 6th instant. I cannot, therefore, accept of such an excuse for not publishing my letter.

If you had confined yourself to stating that you doubted whether you should be justified in inserting my authenticated communication, I could have well understood that.

May I request, that you will favour me, by the immediate return of the letter in question. I am, Sir, yours faithfully,

Samuel L. Rymer.

The Editor of the *British Journal of Dental Science* presents his compliments to Mr. Rymer.

The letter of the 4th instant did not arrive until *Monday*, 6th September.

If the notice is read correctly, it will appear that the reason of the non-insertion of the letter was—because its contents were of such a nature, that it required more consideration than could be given to it, in consequence of its late arrival.

The letter referred to did not excite doubt as to the possibility of any liability in publishing it, and was therefore inserted, although it did arrive after date.

Mr. Weiss' letter also arrived at the same time as Mr. Rymer's; nevertheless, it was published, simply because it was differently expressed.

New Burlington Street, 17th September 1858.

North End, Croydon. *September* 20, 1858.

Sir,—I beg to acknowledge the receipt of your note, dated the 17th instant, with the enclosure of my letter of the 4th instant.

With regard to the former, I am sorry that I can only look upon the explanation as unsatisfactory. The letter which I addressed to you, on the 4th instant, was, I think, so clearly expressed, that an unprejudiced mind could have determined *at once* upon the propriety of its admission or rejection.

When you rejected my communication, the most straightforward course would, in my opinion, have been to state in your notice that insertion was *refused*.

I think it right to add, that I shall publish the correspondence which has taken place on this subject.

EXTRACTS FROM PERIODICALS.

ALUMINIUM SUTURES, A CHEAP SUBSTITUTE FOR THE SILVER.

By J. M. Frodsham, M.D., House-Surgeon to the Cumberland Infirmary

Few surgeons who have tried the silver suture will, I think, deny the great advantages it possesses over the thread or silk in common use, especially where union by the first intention is required. The only drawback to its general use appears to be its great cost. As a cheap substitute for this, I would recommend aluminium, the new metal recently discovered in Paris, possessing the same qualities for sutures as silver, viz.—pliability, not causing any irritation, or becoming discoloured; and having this advantage, it being half the price. In the cases in which I have tried it, I applied the silver and

aluminium alternately, and allowed them to remain in the wound nine days. When examined at the end of that time, no perceptible difference could be detected in them.—*Lancet, Sept.* 11, 1858.

Death from Chloroform.—Some weeks since, William Rush, aged eleven years, residing near Towcester, received an injury of his foot, which resulted in a shortening of the toe, and an enlargement of the corresponding metatarso-phalangeal joint. As it was necessary to decide whether it was a case of dislocation, or diseased joint, and as any manipulation of the foot produced great agony, an examination under chloroform was determined on, and the medical attendant of the family proceeded to administer it by inhalation. The resistance of the patient defeated the efforts made to produce the condition desired for some time ; but at length some six or eight inspirations appeared to be followed by the effect intended. The pulse had not indicated the slightest disturbance of the circulation, the countenance was composed, and natural in colour and expression, and the breathing resembled natural sleep. The handkerchief used in administering the chloroform was placed in the mother's hand, and the medical gentleman was again taking the foot, when the patient made two short stertorous inspirations ; the chloroform was at once discontinued, but the change to an extreme condition of anæsthesia became rapidly apparent ; the pulse fell, and after a very few hurried and feeble beats ceased to be perceptible at the wrist ; the lips assumed a livid hue, which spread itself over the whole surface, and frothy mucus ran from the mouth. Cold effusion was freely applied, and the patient was turned over, care being taken to keep his mouth from the pillow. Thrice a succession of short laboured inspirations induced the hope that the heart was resuming its functions. Flannels dipped in hot water were immediately applied to the epigastrium, but in vain, for the patient ceased to breathe. The coroner's jury returned a verdict to the effect, that death in this case was caused by chloroform administered to produce insensibility to pain : the general conjecture, however, seems to be, that the chloroform had entered the air passages in a more concentrated form than that which is considered perfectly safe.

COLLEGE OF DENTISTS.

SPECIAL GENERAL MEETING, July 16, 1858.

On Friday Evening, July 16th, a Special General Meeting was held pursuant to a circular issued by order of the Council, to revise and amend the Laws of the College.

Mr. Peter Matthews the President, in opening the proceedings, said:—I do not think, gentlemen, that I have many remarks to make in opening the business of this evening, for you all had a circular, with a copy of the proposed amended Rules, and are consequently well aware of the purposes for which we are met together. The Council consider it requisite that there should be some alteration in certain of the Laws, and they have called you together to submit to you the changes which they propose. I shall offer no further observations at present, but will proceed to the business for the transaction of which you have been summoned. *(Hear, hear).*

Mr. Underwood.—Before any business is gone into, I have to hand in a protest, and I will shortly explain my reasons for doing so. The transactions of the College are known to every Member present, and I need not therefore go into them. Those gentlemen who some time ago seceded from the management, had but one intention when they retired from office, and that was so long as the executive which succeeded them should continue to act up to the intentions of the founders they would not oppose them; they would take no part in the proceedings, but would preserve silence. They would not have interfered with anything that might have been done here so long as the executive body acted up to the spirit and intentions of the founders of the College, but they would still have preserved their rights as members of the Institution. In the first circular issued after the appointment of the Council, it was distinctly stated that no person should be eligible for membership except on examination, and it was upon the faith of that rule that many members of the profession joined the Institution, for they felt that if the College were to be of any advantage to the Profession—if it were to command the confidence and respect of the public, examination must be the test of admission to the rights of membership and not the mere payment of

two guineas a year. (*Hear, hear*). What I am now saying, proceeds from no captious spirit—I am simply explaining the feeling which many gentlemen besides myself entertain upon this all-important question. The late Council used the utmost means in their power to provide for an official examination, and they laid down a *curriculum*. That curriculum, however, was not to come into force for two years—the course of examination so laid down was not to commence until October 1858, so that had that arrangement been carried out, after the month of October 1858, no person could have become a member and have received the diploma of the College without a satisfactory examination. Last November the Council sent round a statement declaring that they intended to abide by that arrangement, and sixty-four gentlemen joined the College in consequence. But in the month of June, I received a circular from the Council announcing that it was not their intention to enforce that by-law. Finding, then, that the so-called Council (*Oh, oh!*) was about to deprive the College of that which I and many other Members regard as essential in order to entitle it to the respect of the Profession at large, and to the confidence of the public, we considered it our duty to enter our protests in the strongest manner. (*Interruption, and cries of Order and Chair*).

A Member.—I rise, Sir, to protest against the phrase which has been used—the "so-called" Council—there is no "so-called" Council. (*More interruption*).

Mr. Robinson.—I call upon the Chairman to put that gentleman down. (*Oh, oh! Interruption, and cries of Chair*).

The President.—If you appeal to me, Mr. Robinson, I must do my duty as Chairman. (*Hear, hear*).

Mr. Robinson.—I do appeal to you—I appeal to preserve order.

The President.—Gentlemen, I must appeal to you to support me. (*Hear, hear*). We have met for a particular purpose, and to that purpose the discussion must be confined. (*Hear, hear*). I rule that Mr. Underwood is in order, and I must request you to support me in upholding the dignity of the office in which you have placed me.

Mr. Robinson.—I will support you.

The President.—I can hear you, Mr. Robinson.

Another Member rose and was about to speak, but was interrupted by cries of "*Order*" and "*Chair.*"

The President.—I have no other wish than to do my duty; I must deal with all impartially, and in that spirit I have decided that Mr. Underwood is in order. (*Hear*). I must entreat you who have

placed me in my present position to aid me in my endeavour to maintain the honour and dignity of the College, and I will gladly hear what any one has to say, and decide impartially to the best of my ability. (*Cheers*).

Mr. Underwood.—I assure you, sir, I feel myself perfectly safe in your hands. Let me say that in using the phrase the "so-called" Council, I did it in reference to the paper which I hold in my hand, and not in any invidious spirit. Well, sir, I and my friends who agree with me, felt bound on receiving that circular to take some step, and we were of opinion that the step we should take was to protest against the Council as not having been legally elected. (*Oh, oh!*). It was elected not by law, but in defiance of the law. (*No, no, hear, hear, and order*). I am not saying this in any invidious spirit, nor with any intention of giving offence, and I claim my right as an Englishman to be heard. (*Cries of Order and Chair*).

The President.—I must say, Mr. Underwood, that I think you are now travelling a little out of the way. (*Hear, hear*). The question is not now whether we are a council, or not; that question has been decided. The Council has been elected, and you had as much voice in that election as any other Member. (*No*). You and your friends, you must bear in mind, formed part and parcel of the meeting, and held up your hands for the appointment of the Committee which was to select the Council from the Members, you having declined to remain Members of that body. (*Hear, hear*). I myself asked you to consent to be nominated, but you refused. You said—"No, you would take no part in the matter." (*Hear*). But you voted for the Committee, and when the question was put, you held up your hand with the rest. I say then, that every thing was done openly and according to law. Every man came and voted as he pleased, and no man was prevented. We do therefore consider ourselves a legally-appointed Council; and I must say, that when you talk about protesting against the legality of the Council, you are travelling out of the way. (*Cheers*). The question for our consideration this evening is as to the alteration of the laws of the College, and if you will confine your observations to that subject, I shall be happy to hear you. (*Hear, hear*).

Mr. Underwood.—I bow, sir, with all respect, to your decision. I have simply then, as you have so decided, to hand in, on behalf of myself and my friends, sixty-eight protests, and to take my leave of

the meeting. At the same time I must request you to see that these protests are duly entered in the records of the College.

The protests were handed to the President, and Mr. Underwood and his friends rose to leave.

The President.—But will you not stay to hear what I have to say in answer to your observations about the examination?

Mr. Robinson.—No, sir—we all of us retire.

Mr. Underwood, and the other Members who took part with him, then retired from the meeting.

The President.—Now, gentlemen, we will proceed to business. I think you will all agree with me in what I have said, that we are a duly elected Council. *(Hear, hear, and cheers).*

Mr. Purland.—Will you allow me to ask a question of Mr. Tibbs?

The President.—Certainly.

Mr. Purland.—The question has reference to the election of officers. When we met to consider the legality of the late Council, Mr. Mackenzie proposed a resolution, which was met by another motion, proposed by Mr. Tibbs, viz., that a Committee of five should be elected to fill up the vacancies which had arisen. Upon that Committee Mr. Underwood was nominated, together with some of his friends who act with him, but they all declined to serve. My name was then joined with others to get up a new Council; but, before the question was put, I asked Mr. Tibbs—"How will your resolution agree with law No. 4?" His answer was—"I put aside all law: it is to be understood that the laws remain in abeyance until the new Council is elected; and I hope, when they are elected, that their first business will be the revision of the laws." No opposition was made to the motion—no word of opposition came from any of the gentlemen who have just left the room; and owing to an observation which I heard, I was induced to look over to where they were sitting; and when the question was put, I distinctly saw them hold up their hands for the appointment of the Committee. I would not have sat upon the Committee, if I had not been assured that I was acting according to law; and I wish now to ask Mr. Tibbs, if I am not right in what I am now saying.

Mr. Tibbs.—I do not quite understand the whole of the question; but the gist of it appears to be—did those gentlemen agree to the appointment of the Committee?

Mr. Purland.—And the consequent abeyance of the law, pending the election of the new Council?

Mr. Tibbs.—No doubt they agreed as to the appointment of the Committee. There can be no doubt in the world about that. And Mr. Underwood himself named Mr. Sass to serve upon it. *(Hear, hear).* I am not a party man. My sole object is the benefit of the dental profession, and I may honestly say, that I have no personal interest to serve, for I have almost done with the profession, and I have no son who will succeed me.

The President.—Well, gentlemen, these protests have been placed in my hands, but they literally amount to nothing. They protest against the constitution of the Council—but we know that we are legally "the Council." We have been duly elected by yourselves, and therefore all our proceedings have been legal. *(Cheers).* I wish, however, that those gentlemen had staid for a few moments; for I should like to have said something to them which perhaps would have done them good. I think, that face to face explanations are always the most satisfactory. There has been so much writing one way, and writing the other way, that speaking face to face is really necessary, to enable us to understand each other, and to know each other's intentions. We have found it necessary to revise these laws, and we are going to make a firm stand, to carry out what we have always wished to carry out, the object of the founders of the institution, in making this College a means of raising the status, and upholding the independence of the profession. *(Hear, hear).* We are not going to abolish the law, but merely to abolish the absurd curriculum which the late Council proposed, a curriculum which was more severe than that of the College of Surgeons, and which we believe we should find to be impossible in practise. Then the by-law for examining candidates before admission was never confirmed or certified by the Members of the College generally; but if our predecessors were so anxious for it, why did they not call a meeting for the purpose, and propose it, and have it confirmed while they were in office? Why did they leave it for the present Council to carry out? Upon maturely considering the subject, we felt that we had better confine ourselves to the dental profession. We believe that the arrangements we have made for the Dental College of England, are such as will satisfy every unprejudiced mind; for they will, if fairly acted upon, tend to establish the position, and uphold the independence of that profession. I will state briefly the heads of what we propose to do; and I do so in consequence of the statements of those gentlemen who have gone away,

that we do not require any examination. This is what we have under our consideration for the future. We intend—these, however, are merely the rough heads, open to such modification as may be thought desirable—we intend, that the law as to examination shall come into operation on the 1st of January 1861; thereby giving every assistant ample time to perfect himself. We propose then, that every new candidate shall be required to produce a diploma of the Royal College of Surgeons, or some other recognised body, for licensing surgeons. In this we shall be taking a firm and an honourable position. Secondly—We propose that the candidate shall produce a certificate of having been articled to a practising dentist for a period of not less than four years, which certificate is to be left with the Secretary a certain number of days previous to the examination. Thirdly—We propose, that before this law comes into operation, the Associates shall be eligible by passing a dental examination only. Fourthly—We propose, that any Member, who remains a Member three years after the ratification of these rules, shall be entitled to the diploma of the College; and that every Member, before these regulations come into force, shall be entitled to his diploma in the third year of his Membership. These are the general heads of what we propose. You will see, that every Member of the College will be entitled to the diploma after three years of Membership, until the new regulation comes into operation, and this, I submit, by giving us three years of supervision, will be, for all present purposes, a sufficient test. I have thought it right to give this explanation, that gentlemen may not misapprehend our intentions. I am most desirous that it should be publicly known, that we do not, as some persons seem to suppose, intend to make this an institution for mere talking, but a College in the strict sense of the term. (*Hear, hear*). And if the Council do not do their duty to your satisfaction, I hope that you will put other persons in their places; but if they do conduct the affairs of the institution efficiently, and to your satisfaction, then I trust you will remember, that they came forward in an emergency to accept the office at your bidding, and to do their best, when none others would undertake the duty. (*Hear, hear*).

Mr. Tibbs.—I must beg permission to reply to one or two observations that have fallen from the Chairman. First with regard to the curriculum which you, sir, have thought fit to characterize as absurd and ridiculous. I was a Member of the Council by which it was passed, and, ridiculous as it was, every article of it was agreed to

unanimously. *(No, from Mr. Perkins).* I believe, with one exception, it was unanimous. *(No, no).* I repeat my belief, that it was carried unanimously, except one clause, and that was carried by the Chairman's vote. I do not think, therefore, that you can, in justice to yourself, or to me and those other gentlemen who acted with us, term it a ridiculous curriculum. *(Hear).* For my part, I felt that it was all that could be desired. You will say, perhaps, more than all that could be desired. I don't think so. I should have been very willing, when I entered the profession, to have submitted to such an examination myself; and I trust you will think again, before you designate it as a ridiculous curriculum. I confess that this is a point upon which I feel very strongly, and I do not think that you are acting wisely in putting off the execution of your scheme for so long a time, because I fear that by doing so, you will lay yourselves open to accusations, that you are blinking the question. In reply to another observation which fell from you, sir, I must remark, that it is not necessary for you to come here to ask the Members of the College generally to agree to any by-law that you may make. Your former law, and your intended law says that the Council have the power to make by-laws, and there is no condition attached to this power. The Council are appointed the Executive of the College, and when you have no longer confidence in the Council, the proper course is to put them out, and appoint others in their places. If they are to come before the general body to obtain its sanction to every one of their transactions before they are carried into effect, we should be just as well without any Council at all. I think that the by-law which you designate as ridiculous, is still the by-law of the College, and I should be sorry to see it departed from in any essential particular.

Mr. Rymer.—I think that Mr. Tibbs is mistaken, as regards the power of the Council. The law unquestionably states, that the Council may make by-laws, but only such as are in consonance with the fundamental laws of the College. (*Hear, hear*). Suppose they were to pass a by-law, that the subscription should be five guineas a year instead of two; this, I apprehend, could not be carried out without the consent of the general body, because it would be contrary to the fundamental law; and so with reference to this examination, the sixth fundamental law states, that election may take place upon certain conditions, not involving the question of examination. As we exist at present, the Council have no power to put their veto on this law, and

I think there can be no question as to the propriety of the course we are taking. (*Hear, hear*).

Mr. Tibbs.—I am sorry to say, that I cannot agree with Mr. Rymer.

A Member.—I submit that that is not the question before the Meeting.

The President.—I think it is a material point, and that it is desirable therefore that we should have the opinion of the Meeting upon it. (*Hear, hear*).

A Member.—I quite agree that the law is as Mr. Tibbs has described it, but being somewhat more democratic in my views than many Members, I should prefer that all our actions should be submitted to the Members at large, and be confirmed by them. That has always been my opinion, but I know that many differ from me; for when I told Mr. Robinson that I felt hurt at what had taken place about the amalgamation question not having been communicated to the Members of the College generally, and said, that I thought he might have mentioned the matter to me, seeing that he came to my house day after day to consult about the affairs of the Institution, he replied, that it was a question entirely for the Council, and with which I, therefore, had nothing to do. I said, that I could not agree with him, and that if I were in his place, and he in mine, and upon any subject vitally concerning the Members at large, I were asked a question, I should state what had taken place. My opinion is, that every Member of the College has as much right to know what is going on in the Council Room, as the Members of the Council themselves.

Mr. W. Perkins.—We have in the constitution of the College, a clause, that the Council shall have the power to make by-laws. This power is very loosely given, but it never could have been intended that we should have the power to destroy a constitutional law, which we should do, if we were, upon our own authority, to institute a different curriculum to that laid down in law No. 6. If by a by-law we make a different condition for the entrance of Members, we in effect destroy that law. And the 17th law says, that no change in the fundamental laws of the College shall be made, except with the consent of a General Meeting. Though, therefore, the Council have the power to make by-laws, they have not the power to make by-laws that would in effect stultify the constitutional law.

Mr. Tibbs.—But are these same laws to be in force for ever?

Mr. Perkins.—No, the 17th law gives you the power of altering them at a special meeting, and this is such a meeting which has been convened for this evening. The Council have thought it right to make certain alterations and revisions, and they have called this general meeting to confirm or to nullify what they have done. I thought that the late Council was exceeding its power in making the new curriculum, and I opposed every part of it. I was supported in my opposition by Mr. Murphy, of Derby, and one or two others. I opposed the clause altogether, except as regarded that part of it which referred strictly to dental education. All that portion relating to the physiological business, and the clinical business, a slight knowledge of which I consider sufficient for our profession, I opposed. This change, therefore, had not my consent, and I contend, that the Council, in passing such a curriculum, abolished the 6th constitutional law, and thereby exceeded their power.

Mr. Tibbs.—What I meant was, that there was no hand held up in the Council against it.

Mr. Perkins.—You are mistaken. I did raise my hand against it.

Mr. Tibbs..—Well, you ought to know best.

Mr. Perkins.—Certainly; for I was the opposing party.

The President.—Now, gentlemen, with your permission we will proceed to the revision of the Laws and Constitution of the College, and as the proposed changes are submitted to you, I shall be glad to hear any remarks upon them that you may be pleased to make. The first and second laws are not altered; shall we say, therefore, that they are confirmed?

Laws 1 and 2 were read over and confirmed.

Law 3 was put, and carrried as follows:—

"Law 3.—The College shall consist of Members and Associates. "Honorary Members and Corresponding Members may be elected in "accordance with Laws 13 and 14."

Mr. Rymer moved Law 4.

Mr. Bennett suggested, that an alteration should be inserted, enabling assistants, who had paid their subscriptions, under the idea of one day becoming members, to have the right to vote on questions of vital importance, such as the dissolution of the College.

The President thought, that in such a case, every Assistant who had paid his subscription should have the right both to speak and to vote.

Mr. Rymer, suggested an amendment to meet the object, and the Law was confirmed in the following terms :—

" LAW 4.—The privileges of Members shall consist in the right " of voting at all General Meetings, of attending ordinary Monthly " Meetings, and all Lectures and Demonstrations which may take " place at the College. Each Member, whose Subscription is not in " arrear, shall also be entitled to a yearly Copy of the Transactions of " the College. Honorary Members and Associates shall have all the " privileges of Members, but shall have no share in the direction of " the affairs of the College."

Mr. Rymer moved, that LAW 5 be confirmed as follows :—

" LAW 5.—The affairs of the College shall be conducted by a " President, Vice-Presidents, a Treasurer, a Secretary or Secretaries, " and by a Council of fifteen others, to be elected annually, by and " from amongst the Members of the College. One-third of such " Council shall retire at the end of the year, but shall be eligible for " re-election. The President, Vice-Presidents, Treasurer, and Secre- " tary or Secretaries, shall be *ex officio* Members of the Council. " The mode of election shall be as follows :—The Chairman and two " Scrutineers having been appointed, the poll shall commence by each " Member present personally delivering his balloting paper to the " Chairman. Country Members who have the privilege of voting " by proxy, shall, if they exercise their privilege, send their proxy- " papers under cover, addressed to the Chairman of the meeting. " The Chairman shall deposit all balloting papers in the balloting-box. " The poll to remain open from half-past seven to nine o'clock in the " evening, when the Chairman and Scrutineers, attended by one of " the Secretaries, shall retire, cast the poll, and sign the return. In " the event of an equality of votes, the Chairman shall have the cast- " ing vote."

Mr. Jordan asked why Assistants were not to be allowed to vote?

Mr. Rymer explained, that in making the distinction recognised in the rule, they were only following in the wake of other similar institutions. There must be a distinction, and it must be recollected, that the Assistants were only called upon to pay half the amount of subscription.

Mr. Bennett proposed an amendment, requiring that the names of candidates for the Council, nominated by Members not connected with that body, should have their names inserted in, and sent out

with the house list, without distinction, his object being to make the election more popular.

Mr. Thomson seconded the amendment, which, after some discussion, was adopted, and the Law was confirmed, with the addition of the following words :—

"Any Member of the College shall be eligible as a Member of the "Council, on being proposed by five other Members, such proposi- "tion to be sent to the Council one month previous to the Annual "General Meeting, and the names of such Candidates shall be printed "with the house list."

Mr. Rymer moved Law 6.

"Law 6.—The Subscriptions to the College shall be as follows :— "The payment of £21 in one sum to be considered as a life compo- "sition; otherwise an annual subscription of £2 : 2s shall be paid "by each Member. The annual subscription of Associates shall be "£1 : 1s. Members shall pay a fee of £1 : 1s on entering the "College, and Associates a fee of 10s 6d.

"All subscriptions shall be due on the first day of January in "each year, and shall be payable in advance. Members and Asso- "ciates whose subscriptions are not paid within four months of the "date on which they are due, shall forfeit the privileges of member- "ship until the subscription shall be paid. If not paid within twelve "months after it is due, the membership shall cease. The Council "shall, however, possess the power to re-admit such defaulting mem- "ber upon his paying his arrears, if they, in their discretion, think "fit so to do, in which case, the entrance fee will not be required."

Mr. Purland.—I propose, that instead of four months, three months be introduced; and that if the money be not paid within twelve months, the defaulting Member shall be struck off the list of the College.

A Member.— I second the amendment.

Mr. Perkins.—I think six months would be rather sharp pratice. I agree, that the privilege should be withdrawn after three months non-payment, but I think, if the suspended Member chooses to come down from his suspension within the twelve months, we should reinstate him on paying the subscription. Remember he will have lost his privileges, possibly for nine months. I admit, that we want something definite on this point—we want a law which shall prevent gentlemen who have once been Members, coming here and claiming the right to speak, and to interrupt the business of the institution, though

they have not paid their subscription, and probably have no intention of doing so.

Mr. Purland.—I have no objection to give way.

A Member.—I think it would be better to let the law stand as it is. A Member may be out of the country, and unable to pay his subscription within the time mentioned.

Several Members.—Then let him pay in advance. *(Hear).*

The President.—We have had instances lately of gentlemen coming to our Meetings and making a great noise, interrupting the proceedings, although they had not paid for a long time. I think it hardly fair that persons under such circumstances should be allowed to come in to upset the business, and thwart the wishes of those who have paid their fees. *(Hear, hear).*

A Member.—Just so; and if this proposal is adopted we shall have the power to tell some of the gentlemen who were here in the early part of this evening, the next time they come, "you have no right here, and cannot be allowed to stay;" for I believe I am right in saying as regards several of them, that they have not paid their subscriptions, and that their only object is to break up the College. I say we ought to shut them out.

The President.—I want to shut nobody out; I want their money. *(Hear, and a laugh).*

The Member.—But they would shut you out if they could.

Mr. Purland's amendment was then put and carried, and the law as altered was adopted.

Law 7 was agreed to as follows:—

"Law 7.—The Treasurer shall demand and receive for the use "of the College all moneys due or payable to the College, and shall "keep full and particular accounts of all sums so received. An ac- "count in the name of the College shall be opened, and all moneys "deposited at a Banker's, to be appointed by the Council."

Mr. Rymer moved the adoption of Law 8.

"Law 8.—Every person desirous of being admitted a Member "or an Associate, must be proposed by two Members of the College, "the Candidate being personally known to one of them, and having "deposited his entrance fee, his name shall be placed upon the list of "candidates of admission, and there remain for at least four weeks "previous to the evening on which the ballot takes place, and to se- "cure election, two-thirds of the votes of the Members must be in

" his favour. Should the Candidate not be elected, the entrance fee " shall be returned."

Mr. Bennett proposed an amendment to the effect that Assistants might be nominated by associates, as well as by Members.

Mr. Humby seconded the amendment, which after some discussion was put to a show of hands, and negatived. The Law No. 8 was then put and agreed to.

Laws 9, 10, 11, 12, 13 and 14, were severally proposed and adopted.

" Law 9.—Candidates for Membership, on being proposed, shall " send, or cause to be sent to the Secretaries, or one of them, the " following form, properly filled up:

" We, and being " Members of the College of Dentists of England, recommend " of as a fit and proper person to be " admitted a Member of the College.

" Signed ..... { _____ / _____

" Dated

" Law 10.—The names of new Members shall be once advertised " in the *Times* newspaper by the Council, at the expense of the " College, within fourteen days after their election. Such New " Members shall also be permitted to advertise that they have been " elected Members, in the local newspapers of their respective places " of abode, three times, at their own expense. The following to be " the form of advertisement:

" COLLEGE OF DENTISTS OF ENGLAND.

" Mr. of was " duly elected a Member of the College of Dentists of England, on " the

" Signed,

" *Secretary or Secretaries.*"

" Law 11.—No person combining any kind of business with the " practice of the Dental Profession, shall be a Member of this " College."

" Law 12.—No person shall be an Associate of the College unless " he is an Assistant to a Dentist. Pupils may be admitted to the

" Monthly Meetings upon the production of an order from the Mem-
" ber to whom they are articled."

" LAW 13.—Retired Members of the profession may be elected
" Honorary Members of the College by the Council."

" LAW 14.—Such Members of the Profession, residing out of the
" United Kingdom, as may be considered eligible by the Council,
" shall be nominated Corresponding Members of the College."

Mr. Rymer moved Law 15 as follows :

" LAW 15.—No person allowing his name to be associated with
" disreputable advertisements of any kind, circulating hand-bills, or
" exhibiting show cases, boards or placards, shall be a Member of this
" College. And any Member making a public exhibition of the Di-
" ploma, or of any other document granted him by authority of this
" College, shall have his name removed from the list of Members."

Mr. Spencer. It will be remembered that I endeavoured in the Council to introduce a Law in reference to Chemists practising the Dental Profession. I am not now in submitting the question to this Meeting, speaking as a Member of the Council, but one exercising my privilege, simply as a Member of the College. We know that we can hardly go through any street in London without seeing written up at every Chemist's shop, the word " Dentist." We know that these persons are not Dentists, and that they can only carry on the Dental Profession by getting real Dentists to work for them, they taking the bulk of the profit and paying the Dentist who does the work, what they please. I will not refer further to the past, because I am sure there is no Member of the Profession who has worked for a Chemist, who does not regret having done so ; but I am sorry to say that the evil is growing to such an extent that a very large proportion of the practice is falling into the Chemists' hands. I am quite aware that you cannot make a Law that Chemists shall not be Dentists, but you can make a Law prohibiting Members of this College from working for Chemists. It may be objected that you would then offend many Members who do work largely for Chemists. It may be so ; but the same object might be urged against the law prohibiting Members of the College from resorting to placards and advertisements. But though there are Members who may in times past have resorted to advertising, we find that when they joined the College they conformed to its rules, and no longer advertised or placarded.

Mr. Thomson.—If Dentists would not work for Chemists, there would be no Chemists practising as Dentists.

Mr. Jordan.—But suppose a Chemist is also a Surgeon, as many are, why is he not qualified to act as a Dentist ?

Mr. Tibbs.—Because three irons in the fire are too many to keep hot at the same time. *(Hear)*.

The President.—And I should say he ought to be ashamed of himself to interfere with the practice of another Profession. *(Hear, hear)*.

Mr. Jordan.—That may be ; but why is he not qualified ?

A Member.—Simply because we have a Law to say that he is not.

The President.—There are many Surgeons who are not qualified to act as Dentists.

Mr. Thomson coincided with the President in this opinion.

The President.—The proposition was to exclude all Dentists who worked for Chemists, because if Dentists would not work for Chemists there would be no Chemists practising as Dentists.

Mr. Jordan.—But you must not suppose that all the working Dentists belong to this College; and if they did, it would be rather hard to say that you would deprive a man who might have no other employment, of the means of getting a living by prohibiting his working for a Chemist.

The President.—That is not the question. Every working Dentist has a right to live, and I should be sorry to say that any man should starve, because we prohibit Members of this College working for Chemists.

After some further discussion, Law 15 was postponed for a brief interval, to afford Mr. Spencer an opportunity of proposing an amendment to carry out his views.

Laws 16, 17, 18, 19, 20, 21, 22 and 23 were adopted as follows :—

" Law 16.—The Council shall have the power to remove from " the list of Members, those who, in their judgment, may " do anything to the discredit of the College, or the annoyance of its " Members ; but Members so removed shall have the right of appeal " at a General Meeting ; such appeal to be made within one calendar " month of the date of official notice to the offending Member, other- " wise the right of appeal will be lost."

" Law 17.—An Annual General Meeting shall be held in January " (at such time and place as the Council shall appoint), to receive the " Report of the Council ; to elect Officers for the ensuing twelve " months, and to transact the general business of the College. Such " Annual Meeting may be adjourned by resolution thereof from time

" to time, in case the business brought forward should, from any " cause, not be concluded."

" LAW 18.—The Council may at any time call a Special Gene- " ral Meeting: and they shall at all times be bound to do so on the " written requisition of ten Members, specifying the nature of the " business to be transacted. Notice of the time and place of such " Meeting shall be sent to the Members at least fourteen days pre- " viously, mentioning the subject to be brought forward; and no " other business shall be introduced at such Meeting."

" LAW 19.—At every meeting of the College, or of the Council, " the resolutions of the majority present shall be binding (except in " the case referred to in Law 23); and at such meetings the Chair- " man shall have a casting vote, independently of his vote as a Mem- " ber of the College, or of the Council, as the case may be. Mem- " bers of the College residing beyond twenty miles of Charing Cross " shall be entitled to vote by proxy, for the election of Council and " Officers; and upon all questions at General and Special General " meetings, upon a poll being demanded in writing, signed by five " Members. In case of such poll being demanded, it shall be the " duty of the Chairman to name a convenient day and hour on which " the poll shall be opened and closed."

" LAW 20.—The ordinary meetings of the Members of the Col- " lege shall be held on the first Tuesday in each month, excepting in " the months of July, August, and September. The business at " such meetings shall consist in the election of new Members; the " exhibition of specimens illustrative of facts and theories in connec- " tion with dental science; the reading of papers (the subject being " previously approved by the Council), and general discussion bearing " upon such papers. The conduct of these meetings to be under the " entire control of the Council."

" LAW 21.—The Council shall have the power to make By- " laws; but such By-laws shall not contravene the spirit of the " fundamental Laws; fill up vacancies in their own number, and in " any of the offices, and transact the general business of the College."

" LAW 22.—Every person, upon being admitted a Member or " Associate of this College, shall sign the following Declaration :—

' In consideration of my being admitted a Member or Associate of ' the College of Dentists of England, I hereby undertake to agree and ' abide by the Laws and By-laws of the said College.

' Signed.'

"LAW 23.—The College shall not be dissolved unless two-
"thirds of the Members shall vote for its dissolution."

The discussion on Law 15 was then resumed, and Mr. Spencer moved to insert after the word "placard" the following words by way of amendment—"or acting for, or assisting any person who combines "any other business with that of a Dentist, shall be a Member or "Associate of this College."

Mr. Perkins.—I am sorry to differ with Mr. Spencer; but by adopting this amendment, I think we should be dealing somewhat too hardly with men, who might be in want of bread. I am as anxious as any one to keep the Dental Profession in the hands of the Dentists, but if a working Dentist were actually in want of employment, and a Chemist offered it to him, it would be cruel to prevent his accepting it.

Mr. Thomson.—But if the Chemist did not get the order, the Dentist would. We must recollect, that the Chemist has many opportunities of supplanting the profession. A person goes to him to cure the tooth-ache. The Chemist says—"You want artificial teeth, I can furnish you with them." He gets the order, and employs the working dentist to execute it, pays him a miserable sum, while he obtains the bulk of the profit. I have recently seen a handbill circulated by a chemist, in which he states, that after twelve months' study, he is about to practise the profession of a dentist. He does not say he has been taught, and the probability is that he knows nothing about it. He will get dentists to work for him, and will make a large profit out of their knowledge and labour. It is clear that if the dentists were to refuse to work for him, he could not take the work, and it would then go to the legitimate dentist direct. Some time ago, I was applied to by a chemist to tell him what books he had best study to qualify himself as a dentist *(a laugh)*. "But books won't do," said I, "you ought to have some instruction." "That is not necessary," he replied, "I only want to get a little insight into it, that I may practise in a small way." I have myself refused three chemists as pupils: but I consented to take one who intended to practise the dental profession only, and to abandon the chemist's business; and I thought myself justified in so doing.

Mr. Bell.—I entirely approve of Mr. Spencer's amendment, and shall have much pleasure in seconding it.

Mr. Williams.—My opinion accords with that of Mr. Perkins—we are not in a position to put the screw on too tightly. Our object

should be to make the College as powerful and useful as possible, but by such a clause we should, I think, exclude many valuable members.

In reply to Mr. Watt.—The President explained, that the word "chymist" was not in the clause; the words were—"who combines any other profession with that of dentist."

Mr. Bennett supported the amendment.

Mr. Tibbs.—As the father of Law 8 I beg to offer a few remarks. By-law 8, which I was mainly instrumental in passing, it is declared:—

"That no person combining any kind of business with the practice of the Dental profession shall be a member of this College."

Now, this amendment merely brings the assistants under that law. And it ought to be so; for, as has been justly remarked, if there were no dentists to work for the chymists, we should have no chymist-dentists. And I might go still further, and say—if we had had no dentists to work for surgeons, we should have no surgeons dentists. *(Hear, hear).* You will not be consistent or carry out what you profess—the protection of the public against imposition—unless you make this rule. I say, that we are justified in putting on the screw when we find men trying to pick our pockets. By coming into the profession by a side wind, and making it a collateral branch of their own, these persons can afford to work at a lower price than we can do.

The amendment was, after some further remarks, put and carried, and the law, as amended, was confirmed.

The Chairman.—We now come to the last law.

Mr. Tibbs.—Not yet: I want you to pass another before that. I am told that we are not to pass By-law No. 18, because it is in contravention of some fundamental law. Now, Law 2 says—"The objects for which the College is established, are to unite members of the Dental Profession into a recognised and independent body, and to provide or suggest means of professional education and examination." With that, the By-Law in question is perfectly consistent! My proposition is, that the 18th By-Law shall be incorporated in the Laws of the College. It is—

"Every Candidate for Membership shall produce certificates satisfactory to the Council or Body of Examiners:—

1.—That he is Twenty-one years of age.

2.—That he has attended two courses of Lectures during two separate Sessions on General Anatomy and Physiology, and Special

Anatomy and Physiology of the Head, Neck, and Thorax, and Dissected during two separate Sessions.

3.—That he has attended two courses of Lectures during two separate Sessions on General Surgery and Special Surgery of the Head, Neck, and Thorax, with Clinical attendance.

4.—That he has attended one course of Lectures on Therapeutics (including Materia Medica).

5.—That he has attended two courses of Lectures during two separate Sessions on Pathology, general and special

6.—That he has attended two courses of Lectures during two separate Sessions on the Theory and Practice of Dental Surgery.

7.—That he has attended one course of Lectures on Chemistry and Metallurgy, specially applied to Dentistry.

8.—That he has attended two courses of Lectures during two separate Sessions, on the Microscopical, Histological, and comparative Anatomy of the Teeth.

9.—That he has attended during two separate Sessions, the Practical Department of the College at some Hospital or Dispensary connected with the College, or otherwise under some competent Professor approved of by the Council of this College.

10.—That he has been at least four years studying the Mechanical Department of Dentistry with some competent Dentist, and produce a certificate signed by the said Dentist, or his indentures.

11.—The Candidate must also, prior to examination, prepare and submit to the body of Examiners a written Thesis on some subject connected with Dental Science or Art, operate on the Natural Organs, and also produce to the satisfaction of the Examiners, demonstrations of his ability in Dental Mechanism."

That is what I wish to be incorporated in the Laws of the College. I do not expect my proposition to be seconded, but I want it to be entered in the records of the meeting that I have proposed it. I propose it in all soberness and all seriousness; for, I think, that until we have a better one, some such examinations should be undergone by every member. I see no reason why our profession should not stand upon an equal footing with that of the surgeon. I see no reason why the dentist should not attend his patient as a medical man. We have, all of us, constantly cases coming before us that arise from constitutional causes, and can only be cured by medical treatment. But, as it is, the conscientious man must send such cases to the medical practitioner. One half of the cases that we are called upon to deal with are to be cured by medical treatment only. In cases of neuralgia, for instance, you cannot cure the patient by removing the tooth —you merely ease the pain at the expense of the tooth. But, had you the knowledge, which such an examination as I propose would render necessary, you would know how to act in such cases. It is not for me to point out to the Council what they should do; but if I was a member of that body, and could not carry out this object, I would not

have anything more to do with it. I hope it will be understood that I am speaking in no hostile or invidious spirit, but I think, that these laws having been passed all but unanimously in the Council, they should not now be thrown over. I move that By-Law No. 18 should be added to the Laws of the College.

No member having volunteered to second the motion—

Mr. Tibbs said—As the motion is not seconded, it must, of course, fall to the ground: but I beg to protest, and I hope my protest will be duly entered, against this valuable and important By-Law being ignored.

Mr. Purland.—It is not ignored; it is only postponed.

Mr. Tibbs.—Then I protest against its postponement beyond the period originally intended; viz., the month of October.

The President.—I admit that there is much matter in your observations, Mr. Tibbs; and as I should be sorry that an opinion should not be taken with respect to your motion, I rise, myself, to second it. In the first place, let me explain that I used a word at the earlier part of the evening which was a *lapsus linguæ;* I did not qualify it by saying, as I ought to have done, that I was speaking of it as the observation made by one of the late members of the Council. In the hurry of the moment, having been interrupted by those gentlemen who retired from the room, I did not make that qualification. It was never my intention to describe the curriculum as ridiculous. I ought to have said, that that was the remark made by another gentleman, who, in speaking of it, said—"Such a curriculum for us is ridiculous, and will drive them all to the College of Surgeons." It is right I should make this explanation, as I had myself a hand in drawing up this curriculum. Without detaining you further, I beg to second Mr. Tibbs's motion, in order that such remarks as gentlemen may think proper to offer may be made upon it.

Mr. Bell.—This is a question in which I take much interest. The by-law in question lays down a certain curriculum, which, I believe, could never practically be carried out. It says, that candidates for the diploma of this College must, besides undergoing a very strict examination, have regularly attended lectures on anatomy, on pathology, on physiology, and on materia medica, at some one of the medical schools. That is to say, that we should all be surgeons. But I do not see any notice that we are to attend clinical lectures and hospital practice. It is not provided that we are to attend surgery and medical practice, without which, I do not think we

should ever be qualified practitioners. Our Chairman stated early in the evening, that after the month of January 1861, every person seeking to become a member of this College must produce a certificate of membership from the College of Surgeons, or some other recognized surgical body. That with the service of four years under articles to a practising dentist would, as it appears to me, meet the object in view and give us the status required. But with regard to the examination proposed by Mr. Tibbs, my belief is, that it would be easier, if that were established, to obtain the diploma of the Royal College of Surgeons than the diploma of this College. I think there can be very little question as to which would rank the highest.

Mr. —— .—In reference to one remark made by Mr. Tibbs, I must be allowed to state that this by-law does, in my opinion, contravene the fundamental laws of the College, so far as regards the admission of Members.

The question was then put, and there being only three hands held up in its favour, was declared to be lost.

Mr. Tibbs.—I thank you, gentlemen, for your votes, for there were two more in my favour than I expected.

The President.—I wish to make one observation as to these protests. The first part of the protest I have already answered: but, I observe, it goes on to say—"And I further protest against all acts of the Council as illegal, and demand that all monies of the College expended by such Council be refunded, each member of the said Council being personally liable for the same." Now, in regard to this, I can only say that I shall be happy to refund any money which we may have expended in carrying on the business of the College, if it should be the opinion of the majority that we should be held personally liable. *(Hear, hear).* But the fact is, that we have expended little or no money. All the expenditure has been incurred by the late Council; and all that the present Council have done in the way of expenditure, has been to pay the debts incurred by their predecessors—the rent of the room, and the servants for their attendance. *(Hear, hear).* If we were called upon, therefore, to refund what we have expended, it would amount, probably, to not more than a very few shillings a head. As your Treasurer, you may depend upon it that I will take care of the funds, and see that no other person shall have it in his power to put his hand upon one farthing of the money that belongs to the College of Dentists of England;

and while there are half a dozen members of that College remaining together, it shall be applied for the purposes of the College, and those only. *(Cheers)*. I feel convinced, that upon reflection, those gentlemen who have left us so suddenly this evening, will come forward again to join us to aid in carrying out the objects of the institution for the benefit of the profession at large. *(Hear, hear)*.

Mr. Rymer.—I think it should be distinctly understood, that of the sixty-four gentlemen to whom Mr. Underwood referred as having joined the College in consequence of the circular in reference to the examinations having been sent out, not one of them has made any complaint to the Council: but I may add, that if any one of them, or all of them, wish to retire, they may receive back their subscriptions immediately. *(Cheers)*.

The last Law was then put and adopted, as follows:—

"No change shall be made in these Laws, except at a General Meeting of Members of the College specially convened for that purpose."

Mr. Bennett.—We witnessed a most unpleasant scene at the beginning of the evening, when a number of gentlemen retired under peculiar circumstances. Now, it is my belief, that the festering wound which exists amongst the members of the College may be healed, and a healthy feeling restored. *(Hear, hear)*. I would not have presumed to take any step myself in the matter, but that I feel that not having sided with either party (if I may use the expression), or spoken for or against the one or the other, I may possibly have some influence on that account. *(Hear, hear)*. I therefore beg to submit the following proposition:—

"That a meeting be convened for the purpose of nominating three Members of the College who have not taken an active part in the late amalgamation proceedings, to confer as to the best means of bringing about unity in the profession."

I have sanguine hopes, that if three gentlemen who have not taken any active part in the proceedings one way or the other, were to meet and consider the subject, they might devise means for restoring unanimity.

Mr. Tibbs.—I beg to move that the thanks of the meeting be conveyed to the President, for the courtesy, urbanity, and firmness with which he has presided over this meeting. In doing so, I wish

to call attention to a remark of the Chairman's, in what purports to be a report of the last meeting. I find here, that the Chairman is reported to have said—" The Chairman congratulated the meeting on the result of a communication which he had had with Mr. Tibbs, one of their Vice-Presidents. He had told him (the Chairman) that he would never leave the College, although he had a long way to come. 'I will not desert you,' he said, 'as others have done.'" Now, I have no recollection of the Chairman having said this, or anything like it. If he did say so, it was not in my hearing. (*No, no, from the President*). And I did not like it to go forth to the world uncontradicted that I could animadvert in that way upon the acts of any man, or any body of men. I did not say anything of the kind here imputed to me. In my communication with the Chairman, I said that I could not accept office, seeing there was no possibility of my being useful in a Council which was composed of members whose opinions were at variance with my own on many points. I said that I should be happy to be of service to the Council if I could; but that I could not, at present, see any prospect of being so. As to reflecting upon any one else's desertion, I did not for a moment think of such a thing. Indeed, I know not that any one has deserted. I don't know if the same reporter is taking notes now, but I must say that I was much annoyed at the report altogether—for it is anything but a faithful record of our proceedings. (*Hear, hear*).

The President.—I quite agree with you, that a more unfaithful report was never written; and by some accident, the proof sheet was not sent to me as usual for examination, or I should have corrected the errors as far as I could. Unfortunately, Mr. Hughes, our regular reporter—who reports our proceedings admirably—I may say, *verbatim*—was engaged in Parliament, and could not attend. Under those circumstances, I applied to the editor of a paper, and he recommended a gentleman, who, he said, was a reporter engaged on one of the London morning journals, and who, of course, I supposed to be competent; and you see the result. He put into my mouth what other people said, and what I said he put into other peoples' mouths. Mr. Hughes, unfortunately, is prevented by the same cause—his Parliamentary duties—from attending here to night; but we have his *locum tenens*, who, I am assured, is equally qualified. I wrote to Mr. Hughes myself; who, in introducing Mr. Paul—the gentleman who is now taking notes for us—says (alluding to an observation

in my letter not to send me such a man as we had last time—one who made a lot of circles and marks of all kinds, which I thought he could not afterwards read), "I assure you, that Mr. Paul is not merely a man of mark." And now I have no doubt, that with Paul for your reporter, and Peter for your chairman, everything will be done satisfactorily.

The vote of thanks was then put and carried with acclamation, and the meeting separated.

SPECIAL GENERAL MEETING,

Held on Saturday, August 7th, 1858.

This Meeting was convened in accordance with a requisition signed by ten Members, for the purpose of appointing three Members who have not taken any active part in the late amalgamation proceedings, to confer upon the best means of bringing about unity in the profession.

The President, in opening the proceedings, observed, that nothing could be more desirable than unanimous and harmonious action in the ranks of the profession; and that it would give him great pleasure to witness a general reconciliation of its members. He was not aware in what manner Mr. Bennett, who had originated the idea contained in the notice convening the meeting, intended to proceed; but he should be happy to hear that gentleman's views, as well as those of others present, on the subject.

Mr. Bennett said, that his object in the present proceedings was to unite the independent members of the profession, according to the spirit of the Laws of the College. There had been, for some time, every probability of such a result being accomplished, but recent proceedings had rendered it apparent that serious obstacles were in the way. At the last meeting, on the 16th ultimo, was witnessed several gentlemen leaving the room, after handing in a protest. *That* was not the way, in his opinion, of restoring unanimity in the College. But such had been the case, and in order to meet the requirements of the profession, it had occurred to him, that by appointing three perfectly independent members to confer on the best means of putting an end to present differences, there was a greater

chance of success than any other way could afford. He begged to move—"That a Committee be appointed to confer upon the best means of bringing about unity in the profession; such Committee to consist of three Members of the College, who have not taken an active part in the late amalgamation proceedings; and, that this Committee be requested to report thereon to the Members at their earliest convenience." *(Hear, hear).*

The President remarked, that the correct course would be to report to the Council whose duty it would be to convene a meeting of the members; when the report would be presented in the customary form.

Mr. Bennett said, he had no objection to leave out the latter clause; upon which—

Mr. Weiss seconded the motion.

Mr. Perkins said it was important that the Committee should clearly understand the terms upon which they were appointed. The Laws of the College should form the basis of all deliberations, and he considered it should not only be understood, but distinctly expressed, that the Committee should report to the Council the result of their labours; and he begged to move an addition to Mr. Bennett's motion accordingly.

Mr. Purland could not understand with whom the proposed Committee was to confer. He would ask, whether with recusant Members or the opposition body?

Mr. Bennett, in reply, intimated that he had framed his motion without any regard to party distinctions. He believed there were twelve hundred dentists in Great Britain, and it was the intention of the College of Dentists to unite these into one body. The Council being placed in a peculiar position from what had passed, were scarcely, he thought, the proper parties to undertake the task contemplated in his motion, and it was for that reason he preferred that a Committee should be nominated; he did not predict that they would be perfectly successful, nevertheless they would collect the opinions of dentists of various ways of thinking, and the result would probably tend to attain the end contemplated in the Laws.

Mr. Purland was of opinion that it would be useless to appoint any Committee at all. As to the seceders, he did not think their loss was to be regretted. Stanch and firm supporters only were wanted, to carry out their objects, and he believed such composed the present Council and body of Members. He was glad to find outsiders

joining the College in such numbers; the long list of candidates for admission on the board before them, was sufficient proof that no Committee was required as proposed.

Mr. Rymer said he could not agree with what had fallen from his friend Mr. Purland, as he thought it highly important that general unanimity should be restored, if possible, and he looked upon the proposal of Mr. Bennett as the only means, under existing circumstances, of attaining so desirable an end. He believed, that whilst two opposing bodies existed, no substantial benefit would result to the profession. With regard to the several candidates for Membership, no doubt it was gratifying that so many were anxious to join the College of Dentists, which already was a numerous body; but even though they numbered eight hundred, and an opposing body of two hundred or less was in the field, their efforts would be to a great extent paralyzed; and so would those of any other society, whether their numbers were large or small, whilst the College continued to carry out its objects independently. The motion of Mr. Bennett would therefore receive his cordial support.

The President did not suppose that there was any intention on the part of Mr. Bennett to reflect on the Council, who had been indefatigable in their endeavours to develop the objects of the College, and to protect the interests of the profession generally. He would take the opportunity of informing the meeting what the Council had done, in reference to the New Medical Bill. When that Bill was first brought forward, dentists were not even named in any of its clauses. And it did seem to the Council, that Members of the dental profession should at least be exempted from such of its provisions as affected the recovery of their fees and just remuneration, therefore they placed themselves in communication with several Members of the Legislature, including Mr. Walpole, upon the subject, and the result was, that dentists were, for the first time, equally exempted from such operations of the Act as might prove injurious to them, with the chemists, whose rights had been always respected. It should be remembered, that it was no part of the Council's endeavour to be illiberal; they urged that the rights of *all* dentists should be recognized—not of Members of the College only. (*Hear, hear*). Again, it came to the knowledge of the Council, that the opponents of the College had been active with Mr. Beresford Hope, in persuading him to insert a clause in the Bill, giving the College of Surgeons authority to grant special dental diplomas, and to give Her Majesty power to grant

a Charter of Incorporation to a "British College of Dental Surgeons." Thus the opposing party would have copied those who have been at so much pains to rear the College of Dentists, and even endeavour to deprive them of their name. But Mr. Hope was immediately waited upon—the constitution and objects of the College of Dentists of England was clearly explained to him, and he at once decided upon striking out the latter and offensive portion of the clause. He mentioned these things to show that the Council had not been inactive, and it was necessary that the Members should know that they were not neglectful of the interests of the profession, as attempts had been made to overthrow the College by false reports, and endeavours to damnify their proceedings. Matter had appeared in print which was most unjustifiable, and which, it was to be feared, emanated from some of those who aspired to be looked upon as the more enlightened portion of the profession. (*Cheers*).

Mr. Bennett had no intention whatever to reflect upon the Council; if they felt themselves in a position to effect the object of his motion, he would say, let them do it; but he was still of opinion, that it would be best accomplished by a Committee of three independent Members. (*Hear, hear*).

Mr. Bell quite agreed in the propriety of appointing the Committee, but thought three too small a number to undertake such arduous duties.

Mr. Rymer said, that power might be given the Committee to add to their number; he feared a difficulty might be experienced in obtaining the services of even three gentlemen for so delicate a duty as that contemplated in the motion.

The motion was then put from the Chair, with the latter clause omitted, and the following words substituted—"and that such Committee report to the Council at their earliest convenience."

Carried *nem. con.*

The following gentlemen were then duly proposed to act on the Committee, and unanimously approved:—

Mr. S. Tibbs - - - -	Cheltenham
Mr. W. Bennett - - - -	Berners Street
Mr. Owen - - - -	Islington

A vote of thanks having been accorded to the President, for his conduct in the Chair, the proceedings terminated.

SPECIAL GENERAL MEETING, August 25, 1858.

A Special General Meeting of the Members was held on Wednesday, the 25th of August, at the rooms of the Association, in Cavendish Square, for the consideration, and confirmation if approved, of the regulations adopted by the Council, relative to candidates for the diploma of the College.

The President in the chair.

The President opened the business by observing, that the proceedings of the College, from the very commencement, had been entirely public. There had been no closed doors, except at the Council meetings; and every one had had an opportunity of hearing their discussions. They had permitted reporters to attend, and to take notes of all that was said; but he was sorry to find, that this privilege, so freely accorded to all, had been somewhat abused; and seeing the reporter of the "British Journal of Dental Science" present, he should take the liberty of asking him, whether the report of the last meeting had been written out by him; because it was so imperfectly rendered, that he did not think that any gentleman connected with the press could allow such a report to be published? They knew how truthfully and accurately their own reporter always represented their proceedings; and although he (the President) should not always require an absolutely verbatim report, he should stand by the maxim of Lord Denman, that if the reporter of a Journal gave a "garbled" report of the proceedings, he was liable to an action at law. Lord Denman said clearly enough, that you need not publish every word that was said; but that your report must not be a garbled statement. Now their President, unfortunately, had been placed in this very sad position, that he had been made to say, in the "Monthly Journal of Dental Science," things which he had never uttered; whilst what he had said had been struck out; so that the whole pith and scope of his argument had been lost. *(Cheers).* In fact, his speeches had been so garbled, that he did not recognize the version of his own utterances. As the reporter for that periodical was present, he thought it was fair to that gentleman, as well as to himself, that he should ask whether the report, as published, was the report which he had furnished to that paper?

The reporter declined to answer.

The President said, as he could elicit no response, he hoped the reporter, in future, would endeavour to represent fairly what occurred

at their meetings; that he would not strike out whole sentences, which were very important, in order to insert mere verbiage, which was not of the slightest importance. Passing from this, however, and coming to the actual business of the meeting, he had to submit to them the names of numerous gentlemen who were proposed as members, and with respect to whose election he had to take their "Yea" or "Nay."

The following names were then read over, and every gentleman proposed was unanimously elected:—

E. Carter, Esq. - - -	Barnsley, Yorkshire
T. P. Fay, Esq. - - -	Liverpool
E. Hargreaves, Esq. - -	Manchester
J. Horne, Esq. - - -	Glasgow
T. K. Law, M.D., D.D.S. -	Santiago, Chili
G. Lydden, Esq. (Associate) -	Woburn Place, London
W. Margetson, Esq. - -	Dewsbury, Yorkshire
Donald Macleod, Esq. - -	North Shields
B. L. Mosely, Esq. - - -	Hull, Yorkshire
H. Shephard, Esq. - - -	Southsea, Portsmouth

Mr. Rymer then read the circular convening the Meeting.

The President said that they had now heard the curriculum which was prepared by the Council as the condition of Membership, and he trusted that they would approve of it. He regretted that there were not more Members of the College present that evening, and reasons no doubt could be assigned for their absence. He did not like, however, to put reasons into any man's mouth; but he thought the absence of a constituency might generally be regarded as a proof of confidence in the representatives. *(Cheers)*. Without further observations, he should call upon Mr. Bell, the original propounder of those resolutions, to submit them to the Meeting.

Mr. Bell said that, as there were so few Members present, it was not necessary for him to enter upon a minute discussion of the merits of the resolutions. They had been fully argued and canvassed by the Council; and he was happy to say that they had been approved by that body. However, as the Meeting was a small one, and as he had a very great desire that resolutions of this importance should be submitted to the opinion of every Member of the College, he should beg to propose that the views of the Members at large should be taken upon them by means of proxy. *(Cheers)*.

Mr. Rymer suggested that the correct business course would be

for Mr. Bell to move the resolutions at that Meeting, and to submit them for approval to the general body afterwards. Of course they were aware that the majority of their Members resided many miles away from London; and he recommended, therefore, that these matters, all important as they were, should be decided by a general poll.

The President thought it important that the recommendations proceeding from that Meeting should be fully indorsed by them; because country Members naturally looked to what the London men said; and if they found resolutions unanimously carried in London, they would most probably approve of them.

Mr. Bell then formally moved the first resolution.

"Candidates shall be required to produce the Diploma of the 'Royal College of Surgeons,' or that of some recognised Home or "Colonial licensing Surgical body."

Mr. Humby seconded it, and expressed his conviction that there could be no two opinions with respect to such a proposition.

Mr. Rymer supported the motion. It was important in proposing a resolution of this nature, that they should vindicate themselves from any charge of inconsistency, which might possibly be brought against them. They were a perfectly independent body, and yet they spoke in that resolution, of going to the College of Surgeons for a diploma. His view had been in favour of complete independence; and as the resolution was now proposed, it would be seen that they were not compelled to go to the Royal College of Surgeons, but to *some* recognized licensing body. The Licensing Surgical Bodies were established Corporations. If there were no such institutions, he apprehended that the Dentists would very soon originate one for themselves; and he did not see, therefore, that by this resolution they made themselves at all dependant upon the College of Surgeons. If they had declared that they must go before the College of Surgeons, and be examined by a mixed Board of Dentists and Surgeons, they would be in fact tacked on to the tail of the College. But the difference between that proposition and the resolution as it stood, was clearly manifest; and he thought, besides, that it was a perfectly liberal proposition, for it was not to come into operation before three years.

Every respectable Dentist would have the opportunity, in the interim, of becoming a Member of the College, and if he did not avail himself of it, he would have no just ground of complaint. (*Cheers*). He, therefore, supported the resolution, fully believing that it would tend to place the College of Dentists in the position which they

deserved to occupy. He was satisfied that, ultimately, they would become a united body. (*Cheers*).

The President wished to supplement a very few words. It was well known that he personally had no objection whatever to go before the College of Surgeons. So far from it, he had, when a young man, entered at St. George's Hospital, and had gone through all those preliminaries which were essential to becoming a Surgeon; but a very serious domestic calamity, the loss of his eldest daughter, just as he had terminated his studies, quite prostrated him, and compelled him to forego that which was, at the time, a very ardent wish. Desiring now that they should be quite independent, he thought that there was nothing in the resolution which should excite the jealousy of the most sensitive; and he believed that its effect would be to give them a *starting*, and to place them considerably in advance of their present position.

The resolution was then put to the Meeting, and it was carried unanimously.

Mr. Bell proposed the following resolution :—

" Candidates shall also be required to produce a Certificate of " having been articled to a Dental Practitioner for a period of not less " than four years. Such Certificate to be delivered to the Secretary " of the College, thirty days before the Candidates shall be eligible " for their Dental Examination."

He had, he said, much pleasure in introducing it to their notice; but as it had been carefully considered and discussed, and as his name was appended to it, it was not necessary that he should occupy their time by telling them that he approved of the details of the proposition.

Mr. Stoddart seconded the motion, merely observing, that it was consequent upon the first.

It was carried unanimously.

Mr. Bell proposed, and Mr. Imrie, Jun. seconded the next resolution.

" Associates of the College enrolled, and Pupils who shall have " been articled to Members of the College, previous to the foregoing " regulations coming into operation, shall be eligible for Membership, " by passing a Dental Examination only.

Mr. Bell proposed, and Mr. Weiss seconded the last resolution :—

" Any Member who shall maintain his Membership for a period " of three years after the ratification of these Rules, shall be entitled " to the Diploma of the College. And any person who may become " a Member previous to the foregoing Regulations coming into force,

" shall be entitled to the Diploma of the College upon the expiration " of the third year of his Membership."

Both were carried unanimously.

The President said, he trusted he should be excused, if he expressed the pleasure he felt at the unanimity with which they had passed the resolutions. He was satisfied that they ought to stand or fall by their College; because he believed, that as established, it would help to maintain their position, and would in no way derogate from their dignity. (*Cheers.*) Still, these resolutions were so important, that he thought they ought to test the opinion of the Members by a poll; and he hoped, therefore, that that suggestion would be acquiesced in. He had addressed meetings of very great consequence, and where the disposal of large sums of money was at stake, at which there were not so many gentlemen present as there were at that moment; but as had been before observed, the absence of Members only proved their confidence in the Executive. (*Cheers.*)

Mr. Rymer then demanded a friendly poll.

The Chairman said he quite agreed in the propriety of a poll; because he wished that the opinion of every Member of the College should be taken, either personally or by proxy. He should appoint the poll to be taken on Wednesday, 22d September, at eight o'clock.

Mr. Rymer observed, that that was the anniversary of their first meeting, two years ago, at the London Tavern. He also remarked upon the inaccurate statement contained in a letter addressed to the editor of the " British Journal of Dental Science," with respect to the numbers present at their last meeting. Instead of there being only fifteen members present, after the dissentients had left the room, there were thirty-nine. This he could say positively, for he happened to count the numbers. (*Cheers*).

Mr. Purland, in a courteous and complimentary speech, proposed a vote of thanks to the President for his able conduct in the chair.

The President acknowledged the compliment. He reminded the meeting that he was their Treasurer, as well as their President, and that he only occupied the latter position until they should elect some other person to take his place. He was there, however, by the favour of their good opinion, and he relied upon the continuance of that support which had invariably been extended to him.

The proceedings then terminated.

AN HISTORICAL REVIEW OF DENTAL SURGERY.

FROM THE EARLIEST PERIOD TO THE COMMENCEMENT OF THE PRESENT CENTURY.

From Kurt Sprengel's "Geschichte der Medicin" (History of Medicine). Translated from the French of A. T. L. Jourdain, with critical and explanatory Notes. By A. HOCKLEY.

SOME explanation, I consider, is necessary, on presenting to the readers of this Journal a translation, the first into the English language, of that portion of Sprengel's "History of Medicine" which relates to "Dental Surgery."

Thinking the rise and progress of that branch of science to be a subject somewhat interesting, and not entirely unprofitable, I set about collecting the materials necessary for writing its history, from the earliest time to a very recent date; and for that purpose consulted, among others, the above work of Sprengel, which, although a valuable acquisition to medical literature, and frequently referred to by medical and other writers, has never yet been translated into the English language. But finding that the chapter upon operations relating to the teeth contained an historical summary of dental surgery from the earliest period to the commencement of the present century, and, therefore, that my own labours and intentions had been to a great extent anticipated, and, also, that the sources drawn from, were some of those to which I had gone for information, I determined upon a translation of it in preference to completing the task I had commenced, adding some of my own materials in the shape of notes.

I may here observe, that the laudable attempts which are being made to raise the status of the dental profession in this country—the publication of journals devoted to the "diffusion of useful knowledge" bearing directly upon dentistry—and a belief that any addition to the "knowledge" of the history of the science may be made "useful" by those who study it as a profession, have been the only incentives to my appearing in the pages of the *Quarterly Journal of Dental Science.*

A. H.

As the dental art forms at the present day a distinct branch of surgery, and is cultivated exclusively by one class of practitioners,

so also we find, that its practice among the Egyptians, was, from a very remote period, confined to a particular class who devoted themselves entirely to its study.* It was not, however, unknown to the ancient physicians, since it is related that Æsculapius III., the son of Arsippus and Arsinöe, was the first who practised the extraction of teeth. In fabulous times, precepts had then been given against the inconsiderate extraction of these small bones; for Erasistratus speaks of a tooth extractor in lead, which was suspended in the Temple of Delphos, to indicate that only teeth which were quite loose should be extracted. Hippocrates also recommends this precept before every other:—"Extract," says he, "those teeth which are decayed and loosened; but when they are neither decayed nor loosened, yet cause violent pains, it is necessary to cauterise them." Heraclides of Tarentum, and Herophilus, relate cases of persons who had died in consequence of the extraction of teeth. Hippocrates mentions, likewise, a remedy against the fetid-

* The Egyptians paid great attention to health; and so wisely, says Herodotus, was medicine managed by them, that no doctor was permitted to practise any but his own peculiar branch; some were oculists who only studied diseases of the eye, others attended solely to complaints of the head, others to those of the teeth; some again confined themselves to complaints of the intestines, and others to secret and internal maladies: and it is a singular fact, that their Dentists adopted a method not very long practised in Europe, of stopping teeth with gold, proofs of which have been obtained from some mummies in Thebes. They received certain salaries from the public treasury, and after they had studied those precepts which had been laid down from the experience of their predecessors, they were permitted to practice. Though paid by the Government, it was not illegal to receive fees for their advice and attendance.—*Travels in Egypt, by Sir G. Wilkinson.*

Of the skill of the Egyptians in the manufacture of artificial teeth, there are specimens in the Museums of Paris and Berlin. The valuable and extensive collection of Joseph Mayer, Esq., F. R. S., of Liverpool, contains, among other Egyptian antiquities, two pieces of artificial teeth, one of five teeth carved in bone, the other of two teeth in sycamore wood set in gold:—and Dr. Purland has in his collection a tooth found pivoted to a stump in the head of a mummy. Belzoni and others discovered artificial teeth made of sycamore wood, in the sarcophagi of the Egyptians.

ness of the breath, and discoloration of the teeth; and Menamachus* prescribes one for decayed teeth.

Celsus has given a tolerably complete insight into all the operations relating to the teeth. He advises not to resort too hastily to the extraction of a decayed tooth, unless compelled by imperative circumstances. When violent pains necessitate the removal of the tooth, it may be made to fall in pieces by inserting into its cavity a peppercorn, or ivy berry, or by placing around it a preparation composed of the prickle of the thornback (pastinaca) roasted, and afterwards bruised and mixed with resin. If scissile alum, wrapped in a little wool, be placed in the cavity, the tooth will be preserved, and the pain removed. The points of a decayed tooth which hurt the tongue must be filed down. Parulides must be completely removed by excision, and ulcers of the gum, when excited by a carious tooth, should be opened, and the tooth extracted. Any spiculæ of bone, of which the tissue may be impaired, must be removed, and the bone afterwards filed down. When the teeth begin to loosen by reason of the weakness of their roots, or the wasting of the gum, the actual cautery should be applied to the latter, which should afterwards be annointed with honey; but when extraction is absolutely necessary, the gum must first be detached from the tooth, and the tooth moved repeatedly, until it become thoroughly loosened. The tooth is then, if possible, removed by the fingers, or the forceps, if it cannot be reached otherwise, taking care nevertheless, if the tooth is decayed, to fill it with a small piece of lint, or lead, so that it may not break from the pressure of the instrument, which must be pulled direct, lest the thin bone, the alveoli, to which the bent fangs adhere, be broken in any part, for the the extraction of a firm tooth is attended with the greatest danger, the jaw being sometimes dislocated, or the operation, if performed on the superior maxillary, may communicate a shock to the eyes or temples.

It sometimes happens, especially when the tooth to be extracted is small, that the forceps seizes at the same time a portion of the jaw, and when there is a greater effusion of blood than ordinary, we may discover that some portion of the bone is fractured. In this case, the gum must be incised, and the detached bone removed with small pincers, because, without this precaution, the entire jaw bone would

* The preparation which Menamachus composed for the molar teeth, consisted of saffron, cardamom, soot, frankincense, parts of figs, pellitory, and mustard.—*Celsus de Medicina.*

tumefy. After this operation, a poultice, composed of meal and figs, is to be applied, until matter be promoted; the gum is then lanced, and a search made for the splinters. If the bone, without being fractured, is found to be affected by caries, it is filed down.

Celsus scraped a carious tooth until the decayed part was quite removed, and then annointed it with a mixture of rose leaves, nutgalls, and myrrh. He fixed loose teeth by attaching them with a gold thread to those adjoining that were firm, and when in the case of children a second tooth happened to grow before the first had been shed, he extracted the latter, and pressed upon the new tooth so as to force it into its proper position. Such stumps, or portion of roots as remained in the alveolus after the extraction of a tooth, were removed by a forcep, called by the Greeks, Rizagra.

Of the numerous tooth powders invented by the ancients, those of Democritus (of which Galen has given the receipt in verse), and Octavia, sister of Augustus (found in Scribonius Largus), are the most distinguished*.

Scribonius, who does little more than publish formulas of every thing relating to surgery, here abandons his ordinary empiricism, and gives some very judicious precepts. I know well, says he, that many believe there is no better remedy for toothach than extraction, but before proceeding to that, there are many other remedies that may be successfully employed. It is not necessary to proceed at once to extraction, even though caries exist, for by removing the decayed por-

* Galen has transmitted to posterity the formula of two dentifrices, written in verse. Democritus drew them out of a little book called *Pythicus*, which was also the name of him who prepared them; one of them used the powder of radishes dried in the sun, or of white glass finely pulverized and mixed with Indian spikenard. Messalinus made use of a dentifrice composed of burnt hartshorn, mastic, and sal-ammoniac. Perhaps it is doubtful whether these compositions were preferable to the dentrifice which was presented to Calpurnianus by Apulias: the charming verses by which it was accompanied, announced it to be composed of the finest drugs of Arabia. "It is an excellent powder," says he, "very fine, which has the property of whitening the teeth, of dissipating the swelling of the gums, and of removing that which adheres to them so completely, that no traces of tartar can be perceived, even when the gums are exposed by laughter."—*Advice of the ancient Poets, by J. R. Duval.*

tion of the tooth with a sharp cutting instrument, such removal causing no pain, whatever remains is as sound as a perfect or healthy tooth.

Violent toothache yields sometimes to various medicaments, as lotions, fumigations, applied to the diseased part. Loose teeth may be tightened by a decoction of patience root in wine or asses milk. Scribonius also mentions various preparations for tooth powders, that are likewise to be found in Galen, a great number of which had been invented by Andromachus, Antiphanus, Aristocrates, Diocles, Criton, and Temocritus.

Archigenes, for the cure of aching teeth, recommends that they be washed with a decoction of gall nuts, or alkekengi berries, in hot vinegar. Into decayed teeth he inserted sulphate of iron and turpentine, or a mixture of pepper and oil of almonds, of which he also poured a few drops into the ear. Teeth slightly inflamed and changed in colour, he anointed with a mixture of carbonate of soda, peach stones, and resin, until the pain had ceased. He mentions several methods to prevent bleeding of the gums. Appolonius Migmatopolus has made known similar preparations, and marked out several precepts relative to the employment of vapour baths, and cauterization of decayed teeth. Injections of the nose and ears he considers proper to cure toothach.

Galen demonstrates that the teeth are not entirely deprived of sensibility, as might be inferred from the absence of pain when they are filed, from the following facts; having proved on himself that the pain proceeds from the small nerves enclosed by the roots—that the substance of the teeth may easily become inflamed, as denoted by the throbbing pain that is felt, and the blackish colour they acquire, and, the efficacy of antiphlogistics in removing these complaints. As the vacillation of the teeth, observed among aged persons, does not depend on the teeth themselves, but upon the parts surrounding them, being caused, in fact, by their imperfect nourishment, Galen indicates no other remedy than the strengthening the gums. He likewise, with much sagacity, advises, that before we attempt to cure toothach, we should endeavour, above all, to become acquainted with the cause of it, as if we can succeed in removing that, the pains appease themselves. Dental caries, in a great number of cases, proceeds equally from internal causes. Galen extols above every thing as a remedy for toothach, the use of vapour baths, and the introduction into the tooth of a small piece of wax, pressed well in by means of a probe. When the pain cannot be appeased, the tooth should be perforated

with a small trephine, and the same remedies applied as before: if ultimately this method fails, and it is considered desirable to remove the tooth, it can be done without pain to the patient, by the application of pyrethrin root and strong vinegar, from the action of which, the remaining teeth may be preserved by covering them with a layer of wax. At the expiration of an hour, the tooth becomes so loosened, as to be easily removed. It will also fall out by itself if placed in contact with sulphate of copper and strong vinegar.

Black hellebore, or ginger, inserted in the tooth, removes the pain, and prevents fœtedity of the breath. When from a blow or otherwise a tooth is loosened, and projects beyond the level of the others, the projecting part should be filed down, for which purpose a small file is used, and the tooth is held between the fingers, so as to prevent its being further loosened: as soon as the operation causes pain, it is suspended, antidinics are administered, and after the lapse of a few days it is repeated.

Finally, Galen, whilst agreeing with his contemporaries, that it was possible to cause a tooth to fall in pieces, and that without pain; at the same time advises, in one of his writings, that in extracting teeth, it is necessary always to commence the operation by cutting around the gum.

According to Cœlius Aurelianus, scarifications of the gums and the application of cupping glasses to the cheek, are frequently a great relief in toothach. This complaint may also be combatted by a sort of cauterization which is applied by twisting some wool around a probe, dipping it into boiling oil, and applying it either to the tooth itself, or on both sides of the gum.

Cœlius condemns the inconsiderate extraction of teeth, which, as it removes the pain without curing it, ought only to be regarded as a last resource when every other has failed; he urges, above all things, that care should be taken in extracting teeth which are firmly fixed, as the adjacent parts, particularly the eyes, are always affected by the operation, and frequently it is not only one tooth, but the entire jaw which aches in such a manner as to render it necessary to extract all the teeth in order to obtain relief.

Marcellus of Bordeaux was considerably behind his predecessors, whose precepts, as we have seen, were generally very judicious. This writer repeats the same words of Scribonius, and recommends the use of amulets and other superstitious means. Thus, when a tooth which is loose or painful, is to be extracted, the nose of the patient should be

rubbed with brown sugar, ivy, and green oil: he is advised to hold his breath, a stone is then placed between his teeth, and he is made to close his mouth. The fluid which causes the pain is then seen to flow from the mouth in such quantity as frequently to fill three pots; after having cleansed the nose with pure oil, and rinsed the mouth with wine, the tooth is no longer painful, and may be easily extracted. The tooth will likewise drop out by itself if the tooth be rubbed with African sponge, but care must be taken not to meddle with a tooth which is healthy. To preserve oneself to a certainty from the tooth-ach it is only necessary, at the return of the swallow, to repair silently to the border of a clear rivulet, to take some water in the mouth, and to rub the teeth with the forefinger of both hands, and repeat these words—"Hirudo, tibi dico, quo modo hoc in nostro iterum non erit, sic mihi dentes non doleant toto anno."

The teeth, says Ætius, are open at the roots, and these openings admit small nerves coming from the tri-facial. For this reason they are the only bones which can become painful of themselves; they are nourished by the deposition of a superfluous nervous fluid in their interior; but at the period of old age the process of nutrition ceases, they then become loose, and finally drop out. Thus, there are two kinds of odontalgia, the superabundance, or want of the nutritive principle, and by either of these we should be guided in the choice of remedies. These remarks of Ætius display a skilful anatomist for the time in which he lived, as those of Galen on the inflammation of the teeth denote a physician well versed in diagnosis. Ætius advocates the burning of phagedenic ulcers of the teeth, with a probe covered with wool and dipped into boiling oil; also the excision of abscesses of the gums, because when an incision only is made ulcers frequently result from it. When the epulis does not yield promptly to caustics, it is seized with pincers and excised with a straight bistoury. When incision does not suffice to cure ulcers of the gum it is best to extract the decayed tooth which occasions them. As to the manner of filing and extracting the teeth themselves, as well as the treatment of caries with which they may be affected, Ætius does nothing but copy Galen.

Paulus Ægineta distinguishes very well epulis, a fleshy excrescence of the gum, growing above the teeth, from parulis, an abscess of the same gum. The former is removed by raising it with a hook, or forceps, and cutting it out with a bistoury, and the latter is cut round with a sharp-cutting instrument, although it may sometimes

be cured by making a simple incision. After the operation, the patient's mouth should be rinsed with wine, and a mixture of honey and vinegar, followed by an application of verdigris. When a tooth is to be extracted, the gum must be detached from it, down to the edge of the alveolus. It is then seized with the Rizagra, and well shaken, in order to loosen it, and afterwards extracted, by pulling it perpendicularly. He also, with Celsus, recommends, that previous to the operation, the cavity of the tooth be filled with a small tent, so that the tooth may not be broken; projecting teeth may be filed, and the same means may be adopted for removing the sharp edges of those that have been broken; Paul admits with Galen the inflammation of the teeth, and recommends various electuaries and powders, for this, as well as for several other diseases.

---

* With the exception of Galen and Ætius, the knowledge of the Greek and Roman writers of the structure and development of the teeth was very limited, and their views upon the subject extremely fanciful and imperfect. Hippocrates describes the teeth as a glutinous substance, growing from the head and jaws, the fatty part of which is dried by heat, and burnt up, and that they are much harder than the other bones, because there is nothing cold in them. That in the fœtus they are nourished by the food of the mother, and after birth, by the milk which the infant sucks from the breast. He considers that to have many teeth is a sign of living to a considerable age. Aristotle asserts that the teeth continue to grow and increase in length during life, which constitutes the difference between those and the other bones of the body. That man has more teeth than woman, and that the same difference may be observed between the sexes of various classes of animals. Aretæus considers that the cause of toothach is known only to God; and Pliny remarks on the indestructibility of these organs, that while every other part of the bodies enclosed in the sarcophagi was destroyed, the teeth remained perfect. Galen, who possessed a greater amount of knowledge on the subject than any other ancient writer, enters into a full description of the structure and formation of the teeth. He defines them as true bones, and states that they are formed during the period of gestation, but remain hidden in the alveoli until birth. That the canine teeth had received the appellation of ocular, because branches are sent to them from a nerve, which distributes others to the eye; and he describes with accuracy the forms of the roots of the molar teeth of both jaws.

It appears strange that the Greek and Roman writers make no mention of the replacement of the natural teeth by artificial ones, as at the period they wrote, and for a considerable time previously, this branch of the Dental art was extensively practised at Rome and Athens, as may be

inferred from the allusions of Martial and Catullus, and other satirical writers to the manners and customs of the people.

Celsus, who describes most accurately the various operations in Dental Surgery, speaks only of the fixing of teeth, which are loosened, to the adjoining ones by means of gold or silver wire; a method adopted nearly 500 years previously by Hippocrates, and recommended by him chiefly for adjusting fractures of the lower jaw. And who advises, that when the broken ends of the bone are placed in apposition, the teeth should, if they be disturbed and loosened, be tied to others with a gold thread. This practice of fixing teeth was not an uncommon one at that period, as the following extract from the celebrated Laws of the Twelve Tables, will show: the tenth of which, relating exclusively to burials and funeral ceremonies, among other directions, says—"Let no gold be used, but if any one has had his teeth fastened with gold, let it be lawful to bury or burn that gold with the body."

"The advice of the ancient poets upon the preservation of the teeth," formed the subject of a Paper read in 1803, by J. R. Duval, before the Society of Medicine of Paris. An English translation of the same, by J. Atkinson, under the title of "The Dentiste de la Jeunesse," was published in London, 1820: in it will be found many allusions to the wearing of artificial teeth by the ancients.

(To be continued.)

ELECTRO-MAGNETISM AS APPLIED TO DENTISTRY.

Both the dental profession and the public have, for the last few weeks, had their attention particularly drawn to a new method of producing anæthesia in the operation of tooth-drawing; and as this journal is peculiarly devoted to all that may assist the dental operator, or benefit the public, or that *part* of the public which may require the assistance of the dentist, we think it only right to our readers that we should say something of this new, and by some much praised process.

We need scarcely tell our readers, that the process we allude to is the introduction of the galvano-magnetic current, applied to the tooth while under the operation for removal.

As several letters within the last month have appeared in the

public journals (which we think might have with a better grace appeared in the medical prints), some partially descriptive, nearly all laudatory, some giving the inventor's name, and others ignoring it altogether, we will endeavour to put our readers in possession of the *facts* connected with this novel introduction, both as to invention and introduction into this country.

The first notice in this country relative to the invention, appeared in this journal last July, in a letter addressed by Dr. J. B. Berry, of Philadelphia, United States, to Mr. Davenport, of Hull (*see our last number, page* 254), requesting to be informed whether galvanism was in use among dentists in England, for the alleviation of pain in tooth-extracting? The next notice of the subject appeared in the American journals, published in July, and reaching this country about six weeks ago. It was mentioned in the "American Journal of Dental Science," and also in the "Dental Newsletter," published in Philadelphia, in which publications it is discussed, and the *modus operandi* given. We are particular in mentioning these facts, that the profession may know exactly from whence the knowledge which has been made so public by some of its possessors, has originated; as our wish is not only to impart knowledge to our readers, but to do justice to those from whom the knowledge is derived, to our readers, and to ourselves.

It appears then, that Dr. J. B. Francis, dentist, of Philadelphia, United States, is the inventor of the electric method of produciug anæsthesia as applied to dentistry; also, that the Franklin Institute of Philadelphia, as well as the Pennsylvania Association of Dental Surgeons, have thought the subject of sufficient importance to induce them each to appoint a Committee to investigate its merits. The *modus operandi*, as given in the "Dental News-letter," will, we think, be acceptable to most of our readers; and also a few extracts from the report of the Committee of investigation, appointed by the Franklin Institute, also published in the same journal; we therefore do not hesitate to present them to their notice. We copy the following from the "Dental News-letter" of July last:—

"The application is somewhat as follows:—The negative pole or "wire of the ordinary electro-magnetic machine, which is a graduated "battery, is attached to the forcep, or to one handle of it, and then placing "the metallic handle of the other pole in the hand of the patient; by "this means a current is at once formed on the forceps coming in contact "with the tooth. An additional appliance is used in the form of a

" small spring foot-board, which intercepts the current, but by pressure " of the foot upon it the circuit is at once formed. This interruption is " said to be desirable until the forcep is placed upon the tooth, when " the circuit is formed and the extraction made at once." In a note at the bottom of the page from which the above description is taken it is stated :—" One gentleman we saw operate had the attachment " made by drilling a hole through the end of one handle of the forcep, " through which he passed a small copper wire hook, to which the " flexible cord of the battery was attached."

The following is an extract from the report of the Committee appointed by the Franklin Institute, also copied from the *Dental News Letter* :—

" One hundred and sixty-four teeth were extracted in the presence " of the Committee. The Committee is satisfied, from the observation " and experience of its members, that in a large majority of cases of " extraction with this apparatus, no pain whatever is felt by the " patient." To test the question whether the effect might not be simply mental, the circuit was broken without the patient being aware of it, when the usual pain was experienced ; although, " in the same " patient, and on the same occasion, teeth had been removed while " the current was flowing, without causing pain * * * * * * " The sensation produced by the passage of the current is not painful, " it being so adjusted as to be just perceptible to the patient. The " Committee believes its use to be entirely without danger, and not " likely to be followed by any unpleasant after effects. * * * * " The operator requires no new instruments but the battery and " coil."

" As to the theory of these very singular and unexpected results, " the Committee does not express an opinion : of the facts it is fully " satisfied."

A gentleman reports in the same Journal :—" I have extracted " about thirty teeth since I returned, by the Galvanic Process, with " the most satisfactory results, some saying that it did not ' hurt a bit,' " to use their own language."

Several other examples follow, taken from the *Southern Medical and Surgical Journal* for June, in which all the cases are reported to have been more or less favourable, some feeling no pain, while others felt less pain than usual ; and the writer adds, that " The general " expression by those who have tried it seems to be in favour of " electricity in extracting teeth." The writer also remarks that, in

some of the cases, the gums were lanced by the same process, and also that the hand of the operator should be protected with a silk glove.

It will be seen from the foregoing extracts, that the general impression among our transatlantic brethren is favourable to the use of electro-magnetism; and also, that all that has appeared in the *Times*, and other non-professional papers, has been taken from American publications! at any rate, the strong resemblance that the one bears to the other would justify that conclusion.

We will now add a few remarks relative to its application. It is stated in the American Journal from which we have quoted, that the forceps or instrument should be attached to the negative pole of the battery; and the same theory is reproduced by a writer in the *Times*. We beg to assure our readers, that it is quite immaterial which pole the forceps are attached to, so long as the circuit is completed at the proper time. It is also stated than an interrupting footboard should stop the current, and that to complete the circuit, the board must be pressed down. We have seen a contrivance which answers admirably, by which the current is interrupted by pressing down, and when allowed to return to its place, completes the circuit. The advantage in the latter contrivance appears to be, that, the operator, before adjusting his instrument to the mouth, places his foot on the board, and so breaks the circuit, when, having fairly fixed the instrument, the foot is removed, and the current completed, and *remains* complete to the end of the operation: whereas, in the other case, should the operator by any chance remove his foot from the board, the current ceases, and the benefit of it is lost. There is also another great inconvenience which should be guarded against, namely, the contact of the instrument with the lips, cheek, or tongue, the footboard before named prevents the electric influence being felt until the proper time, but it does not confine its influence to the proper part, and this is very necessary, not only at the commencement of the operation, but throughout its whole duration. Any non-conducting substance covering the forceps, will effect this object, but the best thing for the purpose, in our opinion is, a piece of vulvanized india rubber tube, placed over the mouth end of the forceps, so as to reach sufficiently far up towards the hand of the operator as to shield the cheek, &c. from contact with the instrument, leaving the points only free, and in contact with the tooth to be removed.

We have just learned, that a gentleman of the name of Morrison, in Edinburgh, lays claim to the invention of the electric process in

tooth-drawing, and states that he has patented it: and, although he grants permission to all hospitals and public charitable institutions of that kind to use it, he does not permit others to infringe his patent rights. Dr. Francis, it appears, has also patented his process in America, and has an agent here in London, who possesses the right of granting licenses to practise his invention in England. Now, if both these gentlemen insist upon upholding their patent rights, the gentlemen of the law may probably profit a great deal more by electricity, as applied to the teeth, than the Dental profession, or the public.

We really think it a great pity, that gentlemen who have the good fortune to invent anything that can be a boon to suffering humanity, should be so selfish, as to endeavour to confine it to their own especial use, and for their own special advantage; and we further think it a great pity, that the authorities should grant patents for such inventions: we are persuaded that not only does science and the public suffer, but that the inventors themselves are very frequently the victims of their own selfishness.

In concluding our remarks upon this subject, we wish to warn our readers against being over sanguine in their hopes of success in the adoption of the new agent for producing anæsthesia; we are bound to be candid, and confess that our own experience at present does not warrant our belief in its anæsthetic properties. We have seen many cases, some of which were successful, the patients declaring that they had not felt any pain during the operation: in some others, there was a doubt whether there was as much pain as usual; some were decidedly of opinion that there was *not* so much pain as they had generally felt, while others screamed, and said it was dreadful. However, the invention is now fairly on its trial, and we advise our readers to follow our example, and give it its due, and speak truly of it as they find it, neither claiming success for it, or themselves, where success may be wanting; nor depreciating, or condemning it, without having first well investigated it. We shall watch it, and try it; and we hope that our readers will give us the advantage of their several experiences, so that in our next impression we may be enabled to speak more positively of the merits or short-comings of this new bantling of Dental science.

We understand that it is intended, that the subject shall be fully discussed at the College of Dentists; and that the profession generally, will be invited to attend a meeting, shortly to be convened, for the purpose of testing the value of this new aid to Dental Surgery.

MISCELLANEOUS.

DENTAL HOSPITAL OF LONDON.

UNDER the above title an Institution has been established in Soho Square, somewhat similar in principle to one which was proposed to be formed by the College of Dentists, about a year ago, when a Committee was appointed to confer upon the best means of carrying out the scheme. Shortly afterwards, however, the amalgamation proceedings were commenced, and the matter was for the time allowed to rest. Upon the new Council coming into office, a Committee was again nominated to carry out the project; but scarcely had they entered on their duties, when a Dental Hospital was announced in the daily papers; and as it was judged unadvisable in every respect to start a rival institution, the Council adopted the recommendation of the Committee contained in their report, that the College should take no further steps in the business. Some of the originators of the Hospital were Members of the Council of the College of Dentists, when the subject was first discussed in Cavendish Square, and they could not have been ignorant that it was the intention of that body to have carried out the undertaking. But it would appear, that no motives of delicacy suggested the thought to these gentlemen, that although they might abandon their former colleagues, honourable feeling was not consistent with joining persons who had always opposed the College, in founding a Hospital resembling one the preliminaries of which they had heard discussed in the Councils of the College. The opponents of constitutional organization have from the first been wanting in original ideas, and they have only been able to maintain their position by copying the acts of the legitimate body. This Hospital is no exception to the rule. However, the Hospital is formed, and, if properly managed, may prove most useful. We observe amongst the Committee and Officers the names of many well-known individuals, and as we have no desire to throw cold water on the adopted project, we will make no remark upon the acceptance of office by certain of the dental surgeons. But we cannot help thinking, that an ostentatious display of Vice-Presidents, &c., will be looked upon as a vulgarity. It is not usual in the great metropolitan Hospitals to make so great a parade of names, and the Committee will do well to see that they are not made to *over*-play their part.

There is another point we would see enforced, and that is, that none but the REALLY INDIGENT receive aid from the Hospital, otherwise an incalculable injury will be done to a large portion of the profession in the metropolis.

Messrs. Cartwright, Jun., Harrison, Hepburn, C. Rogers, Tomes, and Underwood, are the dental officers.

We shall watch the proceedings of the Hospital, with especial reference to the good it may accomplish *without injury to any of our less favoured fellow practitioners.*

DENTAL MEMORANDA.

By T. PURLAND, Phil. Dr. M.D.—Giessen;—Surgeon-Dentist to the Mesmeric Infirmary.

Continued from page 243, vol. II.

"PUBLIC ADVERTISER, APRIL, 1766.

"FOY, Operator for the Teeth, takes this public Method to inform the Nobility and Gentry, that he still continues at his Lodgings, next Door to the Golden Wheatsheaf, between Clifford and Conduit Street, in New Bond Street.

Those that please to send their Commands, will be attended on in Town or Country, on the shortest Notice."

"DAILY ADVERTISER 1766.

"Mr. Ruspini, Surgeon, Dentist, takes this Method to Acquaint the Nobility and Gentry, that he has just arrived from Dublin, at his Lodgings at Williamson's, Tailor, in Princes-Street Leicester-Fields, and on receiving their Commands, he will wait on them. His staying in Town will be short, being oblig'd to return to Bath.

Mr. Ruspini is extremely sorry to have disappointed several Gentlemen and Ladies of his Dentrifice, occasioned by his long staying in Dublin unexpectedly. They may be supplied with it at the following places, at Mr. Vaugion, Watch-Maker, Spring-Garden; at the Union Coffee-house, opposite the Royal Exchange; with proper Brushes and Directions."

"PUBLIC ADVERTISER 1766.

"ON my first arrival in Town from Norwich, an indisposition which confined me to my house occasioned a public Address in the Daily Papers, the result of which hath introduced me to the favour of many of the Nobility and Gentry &c., which I think it my Duty to acknowledge; and at the same Time assure them, every branch of my Profession will be executed with the greatest Care and Honour, by applying to my House in High Holburn, facing Bloomsbury Market; or to Wilson's Coffee-house in Coventry-street, Leicester-Fields.

"I. Wilson, Surgeon and Operator for the Teeth."

"DAILY JOURNAL, 1769.

"NORMANSELL, Dentist, in Brook-street, Hanover-square, draws Teeth and Stumps in the safest and easiest manner; puts in artificial Teeth from one to any Number required to appear as natural as Art will admit of; puts in real Teeth not to be discerned from the others, without the use of Ligatures to fasten them to the next Teeth; takes out bad Teeth and Transplants others in their Places; stops hollow Teeth, which prevents their further Decay and being offensive; cleans Teeth, and cures the Scurvy and Inflammation in the Gums; and goes through every operation the Teeth and Gums are subject to; is very well acquainted with the nature of the second Dentition, on which the Regularity of the Teeth have so much Dependence."

"DAILY ADVERTISER, SEPT. 1777.

"MR. Talma, Surgeon-Dentist, gives Notice to the Nobility, Gentry, and to the Public in general, that he is lately arrived from Paris, and continues his operations. The many years he has employed chiefly to get perfectly acquainted with the diseases of the Teeth, as well as the Mouth in general, have rendered him capable of undertaking the most difficult Operation on that Part of the Human Body; and he flatters himself to eradicate and cure perfectly those who will do him the Honour to employ him. He has also composed a little Treatise on the Diseases that may affect the Head, which will

be delivered gratis to those who will take the Trouble to call upon him at No. 3, in Cavendish-street, Cavendish-square.

N. B. He intends, for the Conveniency of the Public, to be at Home two Days in the Week, viz. Tuesday's and Friday's, from Twelve till Five. The other Days will be employed in paying his Visits to his Patients abroad."

[Talma was the Father to the eminent Tragedian of that name, who has conferred so much honour on the French Stage.]

DEATH FROM CHLOROFORM.

A distressing case of death from Chloroform occurred at Epsom, on August the 27th.

A remarkably fine young woman, twenty-two years of age (apparently enjoying perfect health), in the service of Dr. Barrett, of Ewell, went to Mr. Keeling, of Epsom, a chemist, who also practises as a dentist, for the purpose of having a tooth extracted under the influence of Chloroform.

Mr. Keeling proceeded to operate, in accordance with a written authority from Dr. Barrett, which the young woman brought with her. The quantity of chloroform administered was very small, but its effects were most unexpected and distressing. She inhaled the chloroform from a napkin, which she held in her hand for a short time, and on being asked if ready, she replied—"Not yet," again sniffed the napkin, and said—"Now."

The tooth was quickly extracted; a slight movement of the jaw followed, when the young woman appeared to faint, and notwithstanding the use of restoratives promptly applied, she never rallied, for she was dead.

An inquest was held the following day, when the jury returned a verdict of—"Accidental death."

The above case should prove a warning to the reckless use of an agent so powerful as chloroform, unless in very exceptional cases; and even in these, *never* without the aid of an experienced assistant.

BIRMINGHAM DENTAL DISPENSARY.

REPORT OF CASES FROM JANUARY 1ST TO AUGUST 22ND 1858.

Number of Males . .	184	Cases of Stopping . .	104
Do. Females .	166	Do. Scaling . .	25
		Do. Extraction . .	269
		Various other Cases .	22
Total Number of Patients	350	Total Number of distinct Operations . . .	420

Sept. 1858. SAMUEL A. PARKER, *Dentist.*

A CANDID ADMISSION.

A contemporary, not occupying the highest position in the literary or scientific world, and which is perhaps better known by a singular want of candour in the very few original remarks which are to be found in its columns, than by anything else, publishes, for once, in its last issue, a candid statement. It is as follows :—

" There is still great lack of original communications to our " pages, and we have been obliged to depend, to a great extent, upon " selections from other periodicals."

POSTSCRIPT.

COLLEGE OF DENTISTS.

On Wednesday, September 22, a Special General Meeting of the Members of the College of Dentists was held in Cavendish Square, for the purpose of adopting or rejecting the proposed Regulations relating to Candidates for the Diploma of Membership of the College, which were submitted to the Members by the Council at a previous meeting on the 25th of August.

At eight o'clock, Mr. Peter Matthews, the President, was about to take the Chair, but was for some minutes prevented from doing

so by the offensive conduct of a stranger, who had obtruded himself into the room.

As our readers are well aware, the proceedings of the College have always been public, and reporters have had free access to its meetings. A monthly print, apparently published with the unworthy object of damaging the College, has sent a person of late to the meetings, to "report" proceedings. The reports appearing in the print alluded to have been grossly garbled. At the last meeting of the College, the President made an allusion to the fact, and expressed his satisfaction of the reports of Mr. Hughes (a parliamentary reporter, by whom the proceedings of the College are usually furnished to this Journal). The "reporter" was given an opportunity to explain himself in the presence of the meeting, but had not the manliness to do so. He, however, in the paper for which he wrote, published a letter, in which the President of the College was spoken of in terms so disrespectful, that the Council unanimously decided that if the *same* person presented himself for admission to the meeting, it should be refused. The same person did present himself. He was informed that he could not be admitted. When the President and Council, however, entered the lecture-room, it was found that this "reporter" would not take "nay," and had seated himself in front of the President's chair. He was requested to retire from the College premises, but obstinately refused. A police officer was sent for, still the stranger would not leave, and had the impudence to stand up in the meeting, and say, "I *defy* you to turn me out." The Council being unwilling to allow a scene to be enacted, decided to hold the meeting in the adjoining apartment. The Members having adjourned, the intruder at last left, and the business of the evening was proceeded with.

The votes of the Members were taken upon the annexed regulations, to come into operation January 1, 1861 :—

I.—Candidates shall be required to produce the Diploma of the "Royal College of Surgeons," or that of some recognised Home or Colonial licensing Surgical body.

II.—Cadidates shall also be required to produce a Certificate of having been articled to a Dental Practitioner for a period of not less than four years. Such Certificate to be delivered to the Secretary of the College, Thirty days before the Candidates shall be eligible for their Dental Examination.

III.—Associates of the College enrolled, and Pupils who shall have been articled to Members of the College, previous to the foregoing regulations coming into operation, shall be eligible for Membership by passing a Dental Examination only.

IV.—Any Member who shall maintain his Membership for a period of three years after the ratification of these Rules, shall be entitled to the Diploma of the College. And any person who may become a Member previous to the foregoing Regulations coming into force, shall be entitled to the Diploma of the College upon the expiration of the third year of his Membership.

The Result of the Poll we give below:—

For the Resolutions—Present	.. .. ..	23
Proxies	.. .. ..	53
		76
Against the Resolution—Present	.. .. ..	none
Proxies	.. .. ..	5
		5
Qualified (proxy) approvals	.. ..	3
Neutral present .. — ..	.. .. ..	4

Some votes too late to be legally included in the above.

GALVANISM IN DENTAL OPERATIONS.

The Council of the College of Dentists, with the view of testing the value of Galvanism as an anæsthetic agent, have convened a meeting of the Members to collect the experience of those who have tried it. We understand, that Members of the profession generally, will be invited to attend. The meeting is fixed we believe, for the 12th instant.

The following gratifying Letter has been received by the President of the College of Dentists, from Mr. Beresford Hope, M.P., in reply to a Communication from the Council conveying the Thanks of that Body to Mr. Hope, in regard to the part he took in passing the New Medical Act :—

Bedgeburg Park, Cranbrook,
September 16, 1858.

Dear Sir,—Permit me to express to yourself personally, and to beg you will have the kindness to transmit to the Council of the College of Dentists of England, my high sense of the honour they have been kind enough to do me in the resolution referring to the part I have been able to take in the recognition, by the late Medical Act, of the profession of Dentists. I shall always be proud and happy to serve the interests of that honourable profession, on whose behalf the College has been instituted.

Believe me, Dear Sir,
Yours very sincerely,
A. B. Beresford Hope.

Peter Matthews, Esq.

VULCANITE RUBBER.

To the Editor of the Quarterly Journal of Dental Science.

Sir,—I am one of several individuals willing to try the "Vulcanite Rubber" as a base, &c., and am desirous to have the right from a lawful source : will you or any of your readers be kind enough to inform me through your valuable Journal from whom it is to be had lawfully? I am only induced to ask this question from the fact that I called on one or two now using or selling it, and who stated in substance, Mr. Goodyear had no power &c. in the matter, and on seeing Mr. Goodyear's agents, *the Patentee*, was informed that "no one had a right to use his invention but those bearing his signature;" and that "any one using it now, without his direct authority, is *liable* to prosecution." How is this, sir, to be reconciled? And what are the facts?

Yours truly,
An occasional Whistler.

THE VULCANITE PROCESS.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—You would confer a favour upon myself and the members of the profession, if you could state whether the Patent taken out by Mr. Goodyear, Jun. for Vulcanizing India-rubber for the basis of Artificial Teeth, has lapsed through non-payment of the Patent fees; and if so, can I, or any other person, use the same without paying the royalty demanded. I am anxious to know if such is the fact, as I understand a party is going through the country disposing of the same.

I am, SIR, yours faithfully,

VIGIL.

[In answer to the question contained in the above letter, as well as to that in the communication of "Whistler," we received the letter at so late a period, that we have had little time to ascertain the facts of the case. We believe, however, that the patent, so far as regards its application to dental purposes, has lapsed. We would therefore recommend caution to the Profession in purchasing any license without enquiry.—*Editor.*]

REVIEWS.

The American Journal of Dental Science. Edited by Drs. CHAPIN A. HARRIS and A. SNOWDEN PIGGOT. Philadelphia: Lindsay and Blakiston. London: Trübner & Co. July, 1858.

The Dental News Letter. Edited and and Published by Drs. J. D. WHITE and J. R. M'CURDY. Philadelphia: July, 1858.

The British Journal of Dental Science. London: John Churchill. August 1858.

The July Number of the *American Journal of Dental Science* contains, as usual, many interesting original communications from able pens, as well as judiciously selected

articles from our own, and other Journals. In the editorial department there are some valuable observations on local Anæsthesia by the application of an electric current, in the course of which it is stated, that the senior editor, with the view of testing the efficiency of this new agent, attended the Infirmary of the Baltimore College of Dental Surgery. A small galvanic battery having been adapted for the purpose, at the time appointed for the experiment, a number of persons with decayed and aching teeth presented themselves for the purpose of undergoing, what they had been led to believe would be a painless operation, and, in nearly every case, their hopes were seemingly realized. The apparent success of these experiments induced the writer to apply the invention of Dr. Francis in his private practice, and the result has been thus far entirely satisfactory.

Our space merely allows us to call attention to this article, which is well worthy of perusal at length, by those who desire further information on the important subject of which it treats.

The Dental News Letter has also papers on the galvanic process, which throw considerable light on the question: besides a variety of valuable information contained in the several departments of the publication, a succinct history (gleaned from the pages of this journal) of the amalgamation proceedings of the English dental bodies is given, concluding with the following sensible remarks :—

" In consequence of this action of the College, in declining the proposed terms of union, the officers, who thought they saw in it a want of confidence in them, resigned; the union, therefore, so desirable in many respects, has not been consummated, and we fear is farther off now, than previous to the negociations. Yet there is no reason why the College of Dentists should lessen their efforts, or become in anywise discouraged, for their wonderful increase in the way of members gives them every encouragement, and their success, and usefulness, have been more than they could reasonably have anticipated for the length of time they have been in

existence; and we sincerely trust, that those office-bearers who contributed so much in the initiation and progress of the College of Dentists, will prosecute their work as ably and efficiently in the future, as they have in the past, in which case there need be no fear as to the result."

Both in the *American Journal*, and *News Letter*, a genial professional spirit pervades all that is written; and it is therefore an unpleasant duty which we owe our readers to bring under notice a publication in which a very different spirit is displayed, and which we the more regret as being published in England. *The British Journal of Dental Science* was started some two years ago, and promised well for the first few months, when the proprietor, wishing to dispose of it, offered to sell it to the College of Dentists; but the offer, being accompanied with an offensive condition, was declined. It was then tendered to, and purchased by persons connected with the Odontological Society, which society, as is well known, was formed to oppose the College. The tone of the journal immediately changed, narrow-minded jealousies alone finding favour with the conductors. This has continued to the present time, and there can be no doubt the publication was *the* great obstacle to the amalgamation of the two dental bodies, virulent attacks upon the College of Dentists being varied with reports of the proceedings of that body, so garbled as to convey entirely false impressions. It is not to be wondered at, that a journal nominally devoted to dental science, should have thus degenerated into a mere vehicle of party attacks. In the August number, under the head of "original communications," we observe the portion of an essay on the structure of the teeth, illustrated by some woodcuts, which have appeared elsewhere unless we are very much mistaken. This is followed, under the same heading, by a paper on diseases of the teeth, copied from the *American Journal of Dental Science*.

The "chemical department" consists of an article on aluminium, copied from *Erdmann's Journal für Chemie*.

Amongst the "Correspondence" we notice the copy of a circular issued to the Members of the College of Dentists by Mr. Ghrimes; a letter from Mr. Keene, in which he expresses his delight that the protesting body (*i. e.* those individuals who assisted to appoint a Committee, to nominate a Council, against which they protested when formed) are likely to associate themselves with *gentlemen*—implying that their previous associates were otherwise than such. Whether this sort of personality is likely to reflect credit upon the writer, we leave our readers to judge.

Lastly, our attention is called to what purports to be "Dental News and Critical Reports." We will pass over the imperfect report of the Meeting of the College of Dentists, on July 16, and proceed at once to the more full, but more garbled, report of the Meeting on the 7th August.

The object of the Meeting was to appoint a Committee to confer on the best means of bringing about unity in the profession. An object so laudable would be thought to win the favour even of our prejudiced contemporary. But no, everything in the College must be reported to its disadvantage if possible, and, consequently, we read a statement of what took place so grossly perverted as to render proceedings, which were in fact business-like, and to the purpose, wholly unintelligible.

In proof of this assertion, we would call attention to our report of the Meeting, in another portion of this journal, as, having been present on the occasion, we are prepared to uphold its integrity; and we believe that every gentleman who attended the Meeting can confirm what we state.

The number of the journal we have referred to is the first under a new editorship, and we are sorry to find that it augurs so ill for its future career.

THE NEW MEDICAL ACT.

Subjoined is the New Medical Act, which we publish in its entirety. It will be observed, that the Act comes into operation *this day*, OCTOBER 1, 1858.

An Act to regulate the Qualifications of Practitioners in Medicine and Surgery.

[*2nd August* 1858.]

WHEREAS it is expedient that Persons requiring Medical Aid should be enabled to distinguish qualified from unqualified Practitioners: Be it therefore enacted by the Queen's most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, as follows:

Short Title. I. This Act may for all Purposes be cited as "The Medical Act."

Commencement of Act. II. This Act shall commence and take effect from the First Day of *October* One thousand eight hundred and fifty-eight.

Medical Council. III. A Council which shall be styled "The General Council of Medical Education and Registration of the United Kingdom," hereinafter referred to as the General Council, shall be established, and Branch Councils for *England*, *Scotland*, and *Ireland* respectively formed thereout as herein-after mentioned.

Members of Council. IV. The General Council shall consist of One Person chosen from Time to Time by each of the following Bodies; (that is to say,)

The Royal College of Physicians:
The Royal College of Surgeons of *England*:
The Apothecaries Society of *London*:
The University of *Oxford*:
The University of *Cambridge*:

The University of *Durham* :
The University of *London* :
The College of Physicians of *Edinburgh* :
The College of Surgeons of *Edinburgh* :
The Faculty of Physicians and Surgeons of *Glasgow* :
One Person chosen from Time to Time by the University of *Edinburgh* and the Two Universities of *Aberdeen* collectively :
One Person chosen from Time to Time by the University of *Glasgow* and the University of *St. Andrew's* collectively :
One Person chosen from Time to Time by each of the following Bodies :
The King and Queen's College of Physicians in *Ireland* :
The Royal College of Surgeons in *Ireland* :
The Apothecaries Hall of *Ireland* :
The University of *Dublin* :
The Queen's University in *Ireland* :
And Six Persons to be nominated by Her Majesty with the Advice of Her Privy Council, Four of whom shall be appointed for *England*, One for *Scotland*, and One for *Ireland* ; and of a President, to be elected by the General Council.

Provision in case the Universities of Glasgow, Aberdeen, and Saint Andrew's, fail to appoint a Person to represent them.

V. If the said Universities of *Edinburgh* and *Aberdeen*, of *Glasgow* and *Saint Andrew's* respectively, shall not be able to agree upon some One Person to represent them in the Council, it shall be lawful for each One of the said Universities to select One Person ; and thereupon it shall be lawful for Her Majesty, with the Advice of Her Privy Council, to appoint One of the Persons so selected to be a Member of the said Council for the said Universities.

Branches of the Council for England, Scotland, and Ireland.

VI. The Members chosen by the Medical Corporations and Universities of *England*, *Scotland*, and *Ireland* respectively, and the Members nominated by Her Majesty, with the Advice of Her Privy Council, for such Parts respectively of the United Kingdom, shall be the Branch Councils, for such Parts respectively of the United Kingdom, to which Branch Councils shall be delegated such of the Powers and Duties vested in the Council as the

Council may see fit other than the Power to make Representations to Her Majesty in Council as herein-after mentioned: The President shall be a Member of all the Branch Councils.

Qualification.

VII. Members of the General Council representing the Medical Corporations must be qualified to be registered under this Act.

Resignation or Death of Member of General Council.

VIII. The Members of the General Council shall be chosen and nominated for a Term not exceeding Five Years, and shall be capable of Re-appointment, and any Member may at any Time resign his Appointment by Letter addressed to the President of the said Council, and upon the Death or Resignation of any Member of the said Council, some other Person shall be constituted a Member of the said Council in his Place in manner herein-before provided; but it shall be lawful for the Council during such Vacancy to exercise the Powers herein-after mentioned.

Time and Place of Meeting of the General Council.

IX. The General Council shall hold their First Meeting within Three Months from the Commencement of this Act, in such Place and at such Time as One of Her Majesty's Principal Secretaries of State shall appoint, and shall make such Rules and Regulations as to the Times and Places of the Meetings of the General Council, and the Mode of summoning the same, as to them shall seem expedient, which Rules and Regulations shall remain in force until altered at any subsequent Meeting; and in the Absence of any Rule or Regulation as to the summoning a Meeting of the General Council, it shall be lawful for the President to summon a Meeting at such Time and Place as to him shall seem expedient by Letter addressed to each Member; and at every Meeting, in the Absence of the President, some other Member to be chosen from the Members present shall act as President; and all Acts of the General Council shall be decided by the Votes of the Majority of the Members present at any Meeting, the whole Number present not being less than Eight, and at all such Meetings the President for the Time being shall, in addition to his Vote as a Member of the Council, have a Casting Vote, in case of an Equality of Votes; and the General Council shall have Power to appoint an Executive Committee out of their own Body, of which the Quorum shall not be

less than Three, and to delegate to such Committee such of the Powers and Duties vested in the Council as the Council may see fit, other than the Power of making Representations to Her Majesty in Council as herein-after mentioned.

Appointment of Registrars and other Officers.

X. The General Council shall appoint a Registrar, who shall act as Secretary of the General Council, and who may also act as Treasurer, unless the Council shall appoint another Person or other Persons as Treasurer or Treasurers, and the Person or Persons so appointed shall likewise act as Registrar for *England*, and as Secretary and Treasurer or Treasurers, as the Case may be, for the Branch Council for *England*; the General Council and Branch Council for *England* shall also appoint so many Clerks and Servants as shall be necessary for the Purposes of this Act; and every Person so appointed by any Council shall be removable at the Pleasure of that Council, and shall be paid such Salary as the Council by which he was appointed shall think fit.

Appointment of Registrars and other Officers by Branch Councils.

XI. The Branch Councils for *Scotland* and *Ireland* shall each respectively in like Manner appoint a Registrar and other Officers and Clerks, who shall be paid such Salaries as such Branch Councils respectively shall think fit, and be removable at the Pleasure of the Council by which they were appointed; and the Person appointed Registrar shall also act as Secretary to the Branch Council, and may also act as Treasurer, unless the Council shall appoint some other Person or Persons as Treasurer or Treasurers.

Fees for Attendance at Councils.

XII. There shall be paid to the Members of the Councils such Fees for Attendance and such reasonable Travelling Expenses as shall from Time to Time be allowed by the General Council and approved by the Commissioners of Her Majesty's Treasury.

Expenses of the Councils

XIII. All Monies payable to the respective Councils shall be paid to the Treasurers of such Councils respectively, and shall be applied to defray the Expenses of carrying this Act into Execution in manner following; that is to say, separate Accounts shall be kept of the Expenses of the General Council, and of those of the Branch Councils; and the Expenses of the General Council, including those of keeping, printing, and publishing the Register for the United Kingdom, shall be defrayed, under the Direction of the General Council, by

means of an equal Per-centage Rate upon all Monies received by the several Branch Councils; Returns shall be made by the Treasurers of the respective Branch Councils, at such Times as the General Council shall direct, of all Monies received by them; and the necessary Per-centage having been computed by the General Council, the respective Contributions shall be paid by the Treasurers of such Branch Councils to the Treasurer or Treasurers of the General Council; and the Expenses of the Branch Councils shall be defrayed, under the Direction of those Councils respectively, out of the Residue of the Monies so received as aforesaid.

Duty of Registrar to keep the Register correct.

XIV. It shall be the Duty of the Registrars to keep their respective Registers correct in accordance with the Provisions of this Act, and the Orders and Regulations of the General Council, and to erase the Names of all registered Persons who shall have died, and shall from Time to Time make the necessary Alterations in the Addresses or Qualifications of the Persons registered under this Act; and to enable the respective Registrars duly to fulfil the Duties imposed upon them it shall be lawful for the Registrar to write a Letter to any registered Person, addressed to him according to his Address on the Register, to inquire whether he has ceased to practise, or has changed his Residence, and if no Answer shall be returned to such Letter within the Period of Six Months from the sending of the Letter, it shall be lawful to erase the Name of such Person from the Register; provided always, that the same may be restored by Direction of the General Council should they think fit to make an Order to that Effect.

Registration of Persons now qualified, and of Persons hereafter becoming qualified.

XV Every Person now possessed, and (subject to the Provisions herein-after contained) every Person hereafter becoming possessed, of any One or more of the Qualifications described in the Schedule (A.) to this Act, shall, on Payment of a Fee, not exceeding Two Pounds, in respect of Qualifications obtained before the First day of *January* One thousand eight hundred and fifty-nine, and not exceeding Five Pounds in respect of Qualifications obtained on or after that Day, be entitled to be registered on producing to the Registrar of the Branch Council for *England*, *Scotland*, or *Ireland*, the Document conferring or evidencing the Qualification or each of the

Qualifications in respect whereof he seeks to be so registered, or upon transmitting by Post to such Registrar Information of his Name and Address, and Evidence of the Qualification or Qualifications in respect whereof he seeks to be registered, and of the Time or Times at which the same was or were respectively obtained: Provided always, that it shall be lawful for the several Colleges and other Bodies mentioned in the said Schedule (A) to transmit from Time to Time to the said Registrar Lists certified under their respective Seals of the several Persons who, in respect of Qualifications granted by such Colleges and Bodies respectively, are for the Time being entitled to be registered under this Act, stating the respective Qualifications and Places of Residence of such Persons; and it shall be lawful for the Registrar thereupon, and upon Payment of such Fee as aforesaid in respect of each Person to be registered, to enter in the Register the Persons mentioned in such Lists, with their Qualifications and Places of Residence as therein dated, without other Application in relation thereto.

Council to make Orders for regulating Registers to be kept.

XVI. The General Council shall, with all convenient Speed after the passing of this Act, and from Time to Time as Occasion may require, make Orders for regulating the Registers to be kept under this Act as nearly as conveniently may be in accordance with the Form set forth in Schedule (D.) to this Act, or to the like Effect.

Persons practising in England before 1st August 1815 entitled to be registered.

XVII. Any Person who was actually practising Medicine in *England* before the First Day of *August* One thousand eight hundred and fifteen shall, on Payment of a Fee to be fixed by the General Council, be entitled to be registered on producing to the Registrar of the Branch Council for *England*, *Scotland*, or *Ireland* a Declaration according to the Form in the Schedule (B.) to this Act signed by him, or upon transmitting to such Registrar Information of his Name and Address, and enclosing such Declaration as aforesaid.

Council may require Information as to Course of Study, &c., required for

XVIII. The several Colleges and Bodies in the United Kingdom mentioned in Schedule (A.) to this Act shall from Time to Time, when required by the General Council, furnish such Council with such Information as they may require as to the Courses of Study and Examinations to be gone through

obtaining Qualifications.

in order to obtain the respective Qualifications mentioned in Schedule (A.) to this Act, and the Ages at which such Courses of Study and Examination are required to be gone through, and such Qualifications are conferred, and generally as to the Requisites for obtaining such Qualifications; and any Member or Members of the General Council, or any Person or Persons deputed for this Purpose by such Council, or by any Branch Council, may attend and be present at any such Examinations.

Colleges may unite in conducting Examinations.

XIX. Any Two or more of the Colleges and Bodies in the United Kingdom mentioned in Schedule (A.) to this Act may, with the Sanction and under the Directions of the General Council, unite or co-operate in conducting the Examinations required for Qualifications to be registered under this Act.

Defects in the Course of Study or Examinations may be represented by General Council to Privy Council.

XX. In case it appear to the General Council that the Course of Study and Examinations to be gone through in order to obtain any such Qualification from any such College or Body are not such as to secure the Possession by Persons obtaining such Qualification of the requisite Knowledge and Skill for the efficient Practice of their Profession, it shall be lawful for such General Council to represent the same to Her Majesty's Most Honourable Privy Council.

Privy Council may suspend the Right of Registration in respect of Qualifications granted by College, &c. in default but may be revoked.

XX. It shall be lawful for the Privy Council, upon any such Representation as aforesaid, if it see fit, to order that any Qualification granted by such College or Body, after such Time as may be mentioned in the Order, shall not confer any Right to be registered under this Act: Provided always, that it shall be lawful for Her Majesty, with the Advice of Her Privy Council, when it is made to appear to Her, upon further Representation from the General Council or otherwise, that such College or Body has made effectual Provision, to the Satisfaction of such General Council, for the Improvement of such Course of Study or Examinations, or the Mode of conducting such Examinations, to revoke any such Order.

Persons not to be registered in respect of Qualifications granted by the

XXII. After the Time mentioned in this Behalf in any such Order in Council no Person shall be entitled to be registered under this Act in respect of any such Qualification as in such Order mentioned, granted by the College or Body to which such Order relates, after the Time therein mentioned,

and the Revocation of any such Order shall not entitle any Person to be registered in respect of any Qualification granted before such Revocation. College Body before Revocation.

XXIII. In case it shall appear to the General Council that an attempt has been made by any Body, entitled under this Act to grant Qualifications, to impose upon any Candidate offering himself for Examination an Obligation to adopt or refrain from adopting the Practice of any particular Theory of Medicine or Surgery, as a Test or Condition of admitting him to Examination or of granting a Certificate, it shall be lawful for the said Council to represent the same to Her Majesty's most Honourable Privy Council, and the said Privy Council may thereupon issue an Injunction to such Body so acting, directing them to desist from such Practice; and in the event of not complying therewith, then to Order that such Body shall cease to have the Power of conferring any Right to be registered under this Act so long as they shall continue such practice. Privy Council may prohibit Attempts to impose Restrictions as to any Theory of Medicine or Surgery by Bodies entitled to grant Certificates.

XXIV. All Powers vested in the Privy Council by this Act may be exercised by any Three or more of the Lords and others of the Privy Council, the Vice-President of the Committee of the said Privy Council on Education being One of them; and all Orders and Acts shall be sufficiently made and signified by a written or printed Document, signed by One of the Clerks of the Privy Council, or such Officer as may be appointed by the Privy Council in this Behalf; and all Orders and Acts made or signified by any written or printed Document purporting to be so signed shall be deemed to have been duly made, issued, and done by the Privy Council; and every such Document shall be received in Evidence in all Courts, and before all Justices and others, without Proof of the Authority or Signature of such Clerk or other Officer or other Proof whatsoever, until it be shown that such Document was not duly signed by the Authority of the Privy Council. As to the making and Authentication of Orders, &c.

XXV. Where any Person entitled to be registered under this Act applies to the Registrar of any of the said Branch Councils for that Purpose, such Registrar shall forthwith enter in a Local Register in the Form set forth in Schedule As to Registration by Branch Registrars.

(D.) to this Act, or to the like Effect, to be kept by him for that Purpose, the Name and Place of Residence, and the Qualification or several Qualifications in respect of which the Person is so entitled, and the Date of the Registration, and shall, in the Case of the Registrar of the Branch Council for *Scotland* or *Ireland*, with all convenient Speed send to the Registrar of the General Council a Copy, certified under the Hand of the Registrar, of the Entry so made, and the Registrar of the General Council shall forthwith cause the same to be entered in the General Register; and such Registrar shall also forthwith cause all Entries made in the Local Register for *England* to be entered in the General Register; and the Entry on the General Register shall bear Date from the Local Register.

Evidence of Qualification to be given before Registration.

XXVI. No Qualification shall be entered on the Register, either on the First Registration or by the way of Addition to a registered Name, unless the Registrar be satisfied by the proper Evidence that the Person claiming is entitled to it; and any Appeal from the Decision of the Registrar may be decided by the General Council, or by the Council for *England*, *Scotland*, or *Ireland* (as the Case may be); and any Entry which shall be proved to the Satisfaction of such General Council or Branch Council to have been fraudulently or incorrectly made may be erased from the Register by Order in Writing of such General Council or Branch Council.

Register to be published.

XXVII. The Registrar of the General Council shall in every Year cause to be printed, published, and sold, under the Direction of such Council, a correct Register of the Names in alphabetical Order according to the Surnames, with the respective Residences, in the Form set forth in Schedule (D.) to this Act, or to the like Effect, and Medical Titles, Diplomas, and Qualifications conferred by any Corporation or University, or by Doctorate of the Archbishop of *Canterbury*, with the Dates thereof, of all Persons appearing on the General Register as existing on the First Day of *January* in every Year; and such Register shall be called "The Medical Register;" and a Copy of the Medical Register for the Time being, purporting to be so printed and published as aforesaid, shall be Evidence in all Courts and before all Justices of the

Peace and others that the Persons therein specified are registered according to the Provisions of this Act; and the Absence of the Name of any Person from such Copy shall be Evidence until the contrary be made to appear, that such Person is not registered according to the Provisions of this Act: Provided always, that in the Case of any Person whose Name does not appear in such Copy, a certified Copy, under the Hand of the Registrar of the General Council or of any Branch Council, of the Entry of the Name of such Person on the General or Local Register shall be Evidence that such Person is registered under the Provisions of this Act.

Names of Members struck off from List of College, &c. to be signified to General Council.

XXVIII. If any of the said Colleges or the said Bodies at any Time exercise any Power they possess by Law of striking off from the List of such College or Body the Name of any One of their Members, such College or Body shall signify to the General Council the Name of the Member so struck off; and the General Council may, if they see fit, direct the Registrar to erase forthwith from the Register the Qualification derived from such College or Body in respect of which such Member was registered, and the Registrar shall note the same therein: Provided always, that the Name of no Person shall be erased from the Register on the Ground of his having adopted any Theory of Medicine or Surgery.

Medical Practitioners convicted of Felony may be struck off the Register

XXIX. If any registered Medical Practitioner shall be convicted in *England* or *Ireland* of any Felony or Misdemeanor, or in *Scotland* of any Crime or Offence, or shall after due Inquiry be judged by the General Council to have been guilty of infamous Conduct in any professional Respect, the General Council may, if they see fit, direct the Registrar to erase the Name of such Medical Practitioner from the Register.

Registered Persons may have subsequent Qualifications inserted in the Register

XXX. Every Person registered under this Act who may have obtained any higher Degree or any Qualification other than the Qualification in respect of which he may have been registered, shall be entitled to have such higher Degree or additional Qualification inserted in the Register in substitution for or in addition to the Qualification previously registered, on Payment of such Fee as the Council may appoint.

Privileges of registered Persons.

XXXI. Every Person registered under this Act shall be entitled according to his Qualification or Qualifications to

practise Medicine or Surgery, or Medicine and Surgery, the Case may be, in any Part of Her Majesty's Dominio and to demand and recover in any Court of Law, with full Costs of Suit, reasonable Charges for professional Aid, Advice, and Visits, and the Cost of any Medicines or other Medical or Surgical Appliances rendered or supplied by him to his Patients: Provided always, that it shall be lawful for any College of Physicians to pass a Byelaw to the effect that no one of their Fellows or Members shall be entitled to sue in manner aforesaid in any Court of Law, and thereupon such Byelaw may be pleaded in bar to any Action for the Purposes aforesaid commenced by any Fellow or Member of such College.

None but registered Persons to recover Charges.

XXXII. After the First Day of *January* One thousand eight hundred and fifty-nine, no Person shall be entitled to recover any Charge in any Court of Law for any Medical or Surgical Advice, Attendance, or for the Performance of any Operation, or for any Medicine which he shall have both prescribed and supplied, unless he shall prove upon the Trial that he is registered under this Act.

Poor Law Medical Officers not disqualified if registered within Six Months of passing of Act.

XXXIII. Provided also, That no Person who on the First of *October* One thousand eight hundred and fifty-eight shall be acting as Medical Officer under an Order of the Poor Law Commissioners or Poor Law Board shall be disqualified to hold such Office by reason of his not being registered as herein required, unless he shall have failed to be registered within Six Months from the passing of this Act.

Meaning of Terms "legally qualified Medical Practitioner," &c.

XXXIV. After the First Day of *January* One thousand eight hundred and fifty-nine, the Word "legally qualified Medical Practitioner" or "duly qualified Medical Practitioner," or any Words importing a Person recognised by Law as a Medical Practitioner or Member of the Medical Profession, when used in any Act of Parliament, shall be construed to mean a Person registered under this Act.

Registered Persons exempted from serving on Juries, &c.

XXXV. Every Person who shall be registered under the Provisions of this Act shall be exempt, if he shall so desire, from serving on all Juries and Inquests whatsoever, and from serving all corporate, parochial, Ward, Hundred, and Township Offices, and from serving in the Militia, and the

Name of such Person shall not be returned in any List of Persons liable to serve in the Militia, or in any such Office as aforesaid.

Unregistered Persons not to hold certain Appointments.

XXXVI. After the First Day of *January* One thousand eight hundred and fifty-nine, no Person shall hold any Appointment as a Physician, Surgeon, or other Medical Officer either in the Military or Naval Service, or in Emigrant or other Vessels, or in any Hospital, Infirmary, Dispensary, or Lying-in Hospital, not supported wholly by voluntary Contributions, or in any Lunatic Asylum, Gaol, Penitentiary, House of Correction, House of Industry, Parochial or Union Workhouse or Poorhouse, Parish Union, or other Public Establishment, Body, or Institution, or to any Friendly or other Society for affording mutual Relief in Sickness, Infirmity, or old Age, or as a Medical Officer of Health, unless he be registered under this Act: Provided always, that nothing in this Act contained shall extend to repeal or alter any of the Provisions of the Passengers Act, 1855.

No Certificate to be valid unless Person signing be registered.

XXXVII. After the First Day of *January* One thousand eight hundred and fifty-nine, no Certificate required by any Act now in force, or that may hereafter be passed, from any Physician, Surgeon, Licentiate in Medicine and Surgery, or other Medical Practitioner, shall be valid unless the Person signing the same be registered under this Act.

Penalty on wilful Falsification of Register.

XXXVIII. Any Registrar who shall wilfully make or cause to be made any Falsification in any Matters relating to the Register shall be deemed guilty of a Misdemeanor in *England* or *Ireland*, and in *Scotland* of a Crime or Offence punishable by Fine or Imprisonment, and shall, on Conviction thereof, be imprisoned for any Term not exceeding Twelve Months.

Penalty for obtaining Registration by false Representations.

XXXIX. If any Person shall wilfully procure or attempt to procure himself to be registered under this Act, by making or producing, or causing to be made or produced, any false or fraudulent Representation or Declaration, either verbally or in Writing, every such Person so offending, and every Person aiding and assisting him therein, shall be deemed guilty of a Misdemeanor in *England* or *Ireland*, and in *Scotland* of a Crime or Offence punishable by Fine or Imprisonment, and

shall, on Conviction thereof, be sentenced to be imprisoned for any Term not exceeding Twelve Months.

Penalty for falsely pretending to be a registered Person

XL. Any Person who shall wilfully and falsely pretend to be or take or use the Name or Title of a Physician, Doctor of Medicine, Licentiate in Medicine and Surgery, Bachelor of Medicine, Surgeon, General Practitioner or Apothecary, or any Name, Title, Addition, or Description implying that he is registered under this Act, or that he is recognised by Law as a Physician, or Surgeon, or Licentiate in Medicine and Surgery, or a Practitioner in Medicine, or an Apothecary, shall, upon a summary Conviction for any such Offence, pay a Sum not exceeding Twenty Pounds.

Recovery of Penalties.

XLI. Any Penalty to which under this Act any Person is liable on summary Conviction of any Offence may be recovered as follows; (that is to say), in *England*, in manner directed by the Act of the Session holden in the Eleventh and Twelfth Years of Her Majesty, Chapter Forty-three, and in *Ireland* in manner directed by "The Petty Sessions (*Ireland*) Act, 1851," or any other Act for the time being in force in *England* and *Ireland* respectively for the like Purposes; and any such Penalty may in *Scotland* be recovered by the Procurator Fiscal of the County, or by any other Person before the Sheriff or Two Justices, who may proceed in a summary Way and grant Warrant for bringing the Party complained against before him or them, or issue an Order requiring such Party to appear on a Day and at a Time and Place to be named in such Order, and every such Order shall be served on the Party by delivering to him in Person or by leaving at his usual Place of Abode a Copy of such Order and of the Complaint whereupon the same has proceeded, and upon the Appearance or Default to appear of the Party, it shall be lawful for the Sheriff or Justices to proceed to the hearing of the Complaint, and upon Proof on Oath or Confession of the Offence, the Sheriff or Justices shall without any written Pleadings or Record of Evidence, commit the Offender and decern him to pay the Penalty named as well as such Expenses as the Sheriff or Justices shall think fit, and failing Payment shall grant Warrant for Recovery thereof by Poinding and Imprisonment, such Imprisonment to be for such Period as the Discretion of the

Sheriff or Justices may direct, not exceeding Three Calendar Months, and to cease on Payment of the Penalty and Expenses.

Application of Penalties.

XLII. Any Sum or Sums of Money arising from Conviction and Recovery of Penalties as aforesaid shall be paid to the Treasurer of the General Council.

Application of Monies received by Treasurer.

XLIII. All Monies received by any Treasurer arising from Fees to be paid on Registration, from the Sale of Registers, from Penalties, or otherwise, shall be applied for Expenses of Registration and of the Execution of this Act.

Accounts to be published

XLIV. The Treasurers of the General and Branch Councils shall enter in Books to be kept for that Purpose a true Account of all Sums of Money by them received and paid, and such Accounts shall be submitted by them to the respective General Council and Branch Councils at such times as the Councils shall require; and the said Accounts shall be published annually, and such Accounts shall be laid before both Houses in the Month of *March* in every Year, if Parliament be sitting, or, if Parliament be not sitting, then within One Month after the next Meeting of Parliament.

Notice of Death of Medical Practitioners to be given by Registrars.

XLV. Every Registrar of Deaths in the United Kingdom on receiving Notice of the Death of any Medical Practitioner shall forthwith transmit by Post to the Registrar of the General Council and to the Registrar of the Branch Council a Certificate under his own Hand of such Death, with the Particulars of Time and Place of Death, and may charge the Cost of such Certificate and Transmission as an Expense of his Office, and on the receipt of such Certificate the Medical Registrar shall erase the Name of such deceased Medical Practitioner from the Register.

Provision for Persons practising in the Colonies and elsewhere, and for Students.

XLVI. It shall be lawful for the General Council by Special Orders to dispense with such Provisions of this Act, or with such Part of any Regulations made by its Authority as to them shall seem fit, in favour of Persons now practising Medicine or Surgery in any Part of Her Majesty's Dominions other than *Great Britain* and *Ireland* by virtue of any of the Qualifications described in Schedule (A); and also in favour of Persons practising Medicine or Surgery within the United Kingdom on foreign or colonial Diplomas or Degrees before the passing of this Act;

and also in favour of any Persons who have held Appointments as Surgeons or Assistant Surgeons in the Army, Navy, or Militia, or in the Service of the *East India* Company, or are acting as Surgeons in the Public Service, or in the Service of any Charitable Institutions, and also, so far as to the Council shall seem expedient, in favour of Medical Students who shall have commenced their professional Studies before the passing of this Act.

New Charter may be granted to the College of Physicians of London.

XLVII. It shall be lawful for Her Majesty to grant to the Corporation of the Royal College of Physicians of *London* a new Charter, and thereby to give to such Corporation the Name of "The Royal College of Physicians of *England*," and to make such Alterations in the Constitution of the same Corporation as to Her Majesty may seem expedient; and it shall be lawful for the said Corporation to accept such Charter under their Common Seal, and such Acceptance shall operate as a Surrender of all Charters heretofore granted to the said Corporation, except the Charter granted by King *Henry* the Eighth, and shall also operate as a Surrender of such Charter and of any Rights, Powers, or Privileges conferred by or enjoyed under an Act of the Session holden in the Fourteenth and Fifteenth Years of King *Henry* the Eighth, Chapter Five, confirming the same, as far as such Charter and Act respectively may be inconsistent with such new Charter: Provided nevertheless, that within Twelve Months after the granting of such Charter to the College of Physicians of *London*, any Fellow, Member, or Licentiate of the Royal College of Physicians of *Edinburgh*, or of the Queen's College of Physicians of *Ireland*, who may be in practice as a Physician in any Part of the United Kingdom called *England*, and who may be desirous of becoming a Member of such College of Physicians of *England*, shall be at liberty to do so, and be entitled to receive the Diploma of the said College, and to be admitted to all the Rights and Privileges thereunto appertaining, on the Payment of a Registration Fee of Two Pounds to the said College.

HerMajesty may grant Power to

XLVIII. It shall, notwithstanding anything herein contained, be lawful for Her Majesty, by Charter, to grant to the Royal College of Surgeons of *England* Power to institute

and hold Examinations for the Purpose of testing the Fitness of Persons to practise as Dentists who may be desirous of being so examined, and to grant Certificates of such Fitness. College of Surgeons to institute Examinations, &c. for Dentists.

XLIX. It shall be lawful for Her Majesty to grant to the Corporation of the Royal College of Physicians of *Edinburgh* a new Charter, and thereby to give to the said College of Physicians the Name of "The Royal College of Physicians of *Scotland*," and it shall be lawful for the said Royal College of Physicians, under their Common Seal, to accept such new Charter, and such Acceptance shall operate as a Surrender of all Charters heretofore granted to the said Corporation. New Charter may be granted to College of Physicians of Edinburgh.

L. If at any future Period the Royal College of Surgeons of *Edinburgh* and Faculty of Physicians and Surgeons of *Glasgow* agree to amalgamate, so as to form One united Corporation, under the Name of "The Royal College of Surgeons of *Scotland*," it shall be lawful for Her Majesty to grant, and for such College and Faculty under their respective Common Seals to accept, such new Charter or Charters as may be necessary for effecting such Union, and such Acceptance shall operate as a Surrender of all Charters heretofore granted to such College and Faculty; and in the event of such Union it shall be competent for the said College and Faculty to make such Arrangements as to the Time and Place of their Examinations as they may agree upon, these Arrangements being in conformity with the Provisions of this Act, and subject to the Approval of the General Council. The Faculty at Glasgow may be amalgamated.

LI. It shall be lawful for Her Majesty to grant to the Corporation of the King and Queen's College of Physicians in *Ireland* a new Charter, and thereby to give to such Corporation the Name of "The Royal College of Physicians of *Ireland*" and to make such Alterations in the Constitution of the said Corporation as to Her Majesty may seem expedient; and it shall be lawful for the said Corporation to accept such Charter under their Common Seal, and such Acceptance shall operate as a Surrender of the Charter granted by King *William* and Queen *Mary*, so far as it may be inconsistent with such new Charter. New Charter may be granted to the King and Queen's College of Physicians in Ireland.

Charters not to contain new Restrictions in the Practice of Medicine or Surgery.

LII. Provided always, That nothing herein contained shall extend to authorize Her Majesty to create any new Restriction in the Practice of Medicine or Surgery, or to grant to any of the said Corporations any Powers or Privileges contrary to the Common Law of the Land or to the Provisions of this Act, and that no such new Charter shall in anywise prejudice, affect, or annul any of the existing Statutes or Bye-laws of the Corporations to which the same shall be granted, further than shall be necessary for giving full Effect to the Alterations which shall be intended to be effected by such new Charters and by this Act in the Constitution of such Corporation.

Provisions of 17 & 18 Vict. c. 144, as to University of London to continue in force.

LIII. The Enactments and Provisions of the University of *London* Medical Graduates Act, 1854, shall be deemed and construed to have applied and shall apply to the University of *London* for the Time being notwithstanding the Surrender or Determination of the therein-recited Charter, and the granting or Acceptance of the now existing Charter of the University of *London*, or the future Determination of the present or any future Charter of the said University, and the granting of any new Charter to the said University; and that every Bachelor of Medicine and Doctor of Medicine of the University of *London* for the Time being shall be deemed to have been and to be entitled and shall be entitled to the Privileges conferred by the said Act, in the same Manner and to the same Extent as if the Charter recited in the said Act remained in force, subject nevertheless to the Provisions of this Act.

British Pharmacopœia to be published.

LIV. The General Council shall cause to be published under their Direction a Book containing a List of Medicines and Compounds, and the Manner of preparing them, together with the true Weights and Measures by which they are to be prepared and mixed, and containing such other Matter and Things relating thereto as the General Council shall think fit, to be called "British Pharmacopœia;" and the General Council shall cause to be altered, amended, and republished such Pharmacopœia as often as they shall deem it necessary.

Chemists, &c. not to be affected.

LV. Nothing in this Act contained shall extend or be construed to extend to prejudice or in any way to affect the lawful Occupation, Trade, or Business of Chemists and Druggists

and Dentists, or the Rights, Privileges, or Employment of duly-licenced Apothecaries in *Ireland*, so far as the same extend to selling, compounding, or dispensing Medicines.

SCHEDULE (A).

1. Fellow, Licentiate, or Extra Licentiate of the Royal College of Physicians of London.

2. Fellow or Licentiate of the Royal College of Physicians of Edinburgh.

3. Fellow or Licentiate of the King's and Queen's College of Physicians of Ireland.

4. Fellow or Member or Licentiate in Midwifery of the Royal College of Surgeons of England.

5. Fellow or Licentiate of the Royal College of Surgeons of Edinburgh.

6. Fellow or Licentiate of the Faculty of Physicians and Surgeons of Glasgow.

7. Fellow or Licentiate of the Royal College of Surgeons in Ireland.

8. Licentiate of the Society of Apothecaries, London.

9. Licentiate of the Apothecaries Hall, Dublin.

10. Doctor, or Bachelor, or Licentiate of Medicine, or Master in Surgery of any University of the United Kingdom; or Doctor of Medicine by Doctorate granted prior to passing of this Act by the Archbishop of Canterbury.

11. Doctor of Medicine of any Foreign or Colonial University or College, practising as a Physician in the United Kingdom before the First Day of October 1858, who shall produce Certificates to the Satisfaction of the Council of his having taken his Degree of Doctor of Medicine after regular Examination, or who shall satisfy the Council, under Section Forty-five of this Act, that there is sufficient Reason for admitting him to be registered.

SCHEDULE (B.)

DECLARATION required of a Person who claims to be registered as a Medical Practitioner, upon the Ground that he was in practice as a Medical Practitioner in England or Wales before the First Day of August 1815:

To the Registrar of the Medical Council.

I, residing at in the County of hereby declare that I was practising as a Medical Practitioner at in the County of before the First Day of August 1815.

(Signed) [*Name.*]

Dated this Day of 185 .

SCHEDULE (D.)

Name.	Residence.	Qualification.	Title.
A.B..	London ...	Fellow of the Royal College of Physicians of	
C.D...	Edinburgh. .	Fellow and Member of the Royal College of Surgeons of	
E.F...	Dublin	Graduate in Medicine of University of	
G.H..	Bristol ...	Licentiate of the Society of Apothecaries	
I.K...	London	Member of College of Surgeons and Licentiate of the Society of Apothecaries	

NOTICES TO CORRESPONDENTS.

All communications intended for insertion in this Journal must be authenticated by the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

Contributors are requested to be so obliging as to write legibly, and on one side of the paper only.

ATTENTION is particularly requested to the fact, that communications intended for insertion in the next issue, should be sent to the Editor, *not later* than December the 1st, and as much *earlier* as possible.

We have received many suggestions in regard to a more frequent publication of this Journal. Our several friends will excuse this general acknowledgement of, and reply to, their communications, rendered necessary by the small space at our disposal in this portion of the Journal. Whilst we fully appreciate the interest in our exertions evinced by our Correspondents, we have come to the conclusion, after weighing the arguments submitted to us, that it would be an unwise step to disturb the present system of publication. The range of investigation in the Science to which our pages are mainly devoted, is necessarily somewhat limited, and it is questionable whether a Monthly Journal would maintain a respectable position as a *Scientific* publication for any length of time. The political agitation in the profession (which alone could furnish acceptable matter for a monthly) is not likely to be permanent. If it were so, an independent journal would be published at frequent intervals, and the Quarterly (appearing as at present) would be relieved from the pressure on its space, caused by the necessity of inserting political matter, to the exclusion sometimes of valuable papers of scientific interest. We hope and believe that the agitation in the profession is drawing to a close, and that we shall be enabled to complete arrangements which have been making for some time past, to render the Quarterly Journal, if possible, still more worthy the generous support of the profession.

AN ANXIOUS STUDENT will find the operation (termed *Staphyloraphy*) described in *Fergueson's Practical Surgery*, published by Churchill, page 608.

A MEMBER. There can be no question whatever that all who voted at the Meetings are morally bound to pay the subscription. To a well-regulated mind, the debt would be none the less binding because one of honour.

Mr. Long. You can obtain forms of proposal from the Secretaries of the College in Cavendish Square, by written application.

New Medical Act. Upon reference to the Act itself, published at length in this number of the Journal, and to our article upon it, the many inquiries on the subject will be found fully answered.

A. Z. (Wolverhampton). No such book as you allude to has been lately published. For educational purposes the pages of this Journal will be found to answer all you require.

Mr. Davenport (Hull) is thanked for his obliging attention.

Hard Rubber. Too late for insertion. We know nothing of Mr. Putman.

Communications, Letters, &c, have been received from Mr. J. C. Smith, Mr. Hopkinson, Mr. Kempton, Mr. Bate, Dr. Paul, Mr. Barnard, Mr. Birtles, An Anxious Student, Mr. Davenport, One of Eight Hundred Outsiders, A Stanch M.C.D.E., Mr. S. Longhurst, Mr. W. Perkins, Honour to whom Honour, Mr. Weiss, Electric Spark, Mr. Horne, A. Z., Mr. Lovell, Mr. Hockley, Dr. Purland, Mr. Morrison, Mr. Long, Mr. Edwin Williams, A Member, Mr. Parker, An Occasional Whistler, Vigil, Hard Rubber, &c.

*** For the convenience of our transatlantic supporters, we shall, with the new year, make arrangements to establish direct Agencies in the United States and in Canada.

THE NEXT NUMBER OF THIS JOURNAL,

WILL BE PUBLISHED

On Saturday, January 1, 1859,

Erratum.—The name of S. L. Rymer not being appended to a letter in page 305, is an accidental omission.

Charles Ritchie & Co., Printers, Fore Street.

THE

QUARTERLY JOURNAL

OF

DENTAL SCIENCE.

VOL. II. 1859. Cc

Charles Ritchie & Co., Printers, Fore Street, London.

THE

QUARTERLY JOURNAL OF DENTAL SCIENCE.

JANUARY 1859.

VALEDICTORY ADDRESS.

IF some Being capable of foretelling the events of futurity had informed us, three months ago, that we should at the present moment be engaged in writing our Valedictory Address, we should certainly have experienced as much surprise as did Robinson Crusoe, when the print of a man's foot met his astonished gaze. Nevertheless, we find ourselves composedly employed in penning the final and farewell Editorial Article of the "Quarterly Journal of Dental Science."

Some explanation is due to our supporters, in regard to the determination to discontinue the publication of an organ of professional opinion which has, from the first, advocated the cause of progress with fearless independence, and to whose influence (in a very great measure) the attempts on the part of an unworthy combination to crush the constitutional organization which has resulted in the establishment of the College of Dentists of England, have been rendered abortive. In our last impression, we hinted that if a Monthly Journal were started, we doubted whether it would maintain a position as a scientific periodical, although it might be useful for political purposes, and that if such a Journal were published, the "Quarterly" would appear as heretofore. When we made this statement, we had not the remotest

idea of a serious intention on the part of certain responsible parties to undertake the issue of a monthly print, and that these parties contemplated publishing the reports of the Meetings of the College of Dentists. It now appears, that a final arrangement has been made to issue a Monthly Journal, the *Dental Review*, and that the Council of the College have given their sanction to the publication therein of the reports of all Meetings at the College of Dentists. Now as a considerable portion of our Journal is occupied by the scientific essays which are read before the Members of the College, it is evident, that should we be forestalled in their publication, we cannot expect that our pages will afford that full amount of interest which they at present possess. We should still retain the exclusive right to the many original contributions written expressly for the "Quarterly;" but, upon carefully considering the whole subject, which embraces the fact, that the *Dental Review* will be conducted upon principles of impartiality and justice, we have come to the conclusion that it will be to the advantage of the profession that a full and unanimous support should be accorded to the new undertaking. Therefore in bidding farewell to our generous contributors and subscribers, and in thanking them for their support, we would commend the *Dental Review* to their favourable notice.

It remains for us to call to mind a few of the events of the last two years, in order that our readers may in some wise be made acquainted with the difficulties we have had to grapple with in the faithful discharge of our duties. In the first place, the establishment of the College of Dentists, and of the extraordinary opposition to that institution, will claim prominent attention. The College having been founded *publicly*, and on the *representative principle*, has always been regarded by us, as the only association capable of effecting a legitimate organization of the profession, and it has accordingly received our constant sup-

port. The opposition to the College we have been compelled to designate as ungenerous and uncalled for. It was not only ungenerous and uncalled for, but great meanness characterised the acts of the persons of whom it was composed. Secretly and with subtlety have many acts been done, the objects of which were the destruction of the College. We do not wish to extend our thoughts into the several unsavoury facts connected with the opposition referred to, but it would be well for those who have been engaged in underhand work, to institute a little *self* examination and *repentance*, so that the new year may be commenced with a clear conscience and a clean breast. We might recommend some of them to begin by reflecting upon the bad spirit they displayed in their futile endeavours to thwart the Council of the College in providing Lectures of the highest class.

The attempts to unite the two parties into which the Profession is split, next commands attention, and it will be remembered that in this we did our utmost to secure an honourable amalgamation. An amalgamation was not effected, and judging from the manner in which the terms it was proposed to amalgate upon were brought forward, it would appear that there was no real intention on one side to surrender an inch of ground. *The College of Dentists must be annihilated*:—This was a *sine qua non* of the opposition delegates, who also required that the College of Surgeons should be importuned to meddle in matters with which they had no concern. But to recur at length to the amalgamation question is by no means our present intention. We can only regret, that of the many professional reformers who took part in establishing the College of Dentists, several who had gained themselves opportunities of usefulness by availing themselves of which, their names would have been honourably recorded on the book of fame, lacked moral energy to stand firm to their posts: in the hour of trial they fell away.

We now arrive at an epoch in the history of the College when its stability was put to the test indeed. Upon the rejection of the terms of amalgamation, several Members of the Council, whose views had not been endorsed, resigned their posts. These included the President, some of the Vice-Presidents, and two of the Secretaries. In this time of need, we believe we were not wanting in support to the College, which possessing within itself the elements of vitality, withstood the shock, though severe. The vacancies in the Council were filled up, and the Presidental Chair accepted, not without reluctance, by a gentleman eminently calculated in every respect, to fulfil its onerous duties aright. One of the first acts of Mr. Matthews was to endeavour to restore harmony in the ranks of the Profession. It was a praiseworthy endeavour, and one which should have been met in a good spirit. But what were the facts? The President of the College of Dentists, a gentleman of high social position as well as of long professional standing, took the trouble to write and to call upon a leader of the opposition party with the view of sinking all differences. Mr. Matthews explained his own desire and the desire of others to witness unity of action, and intimated that if his retirement from office were essential to secure it, his resignation would be prompt, as would the resignation of others, who might appear to stand in the way. No response of corresponding liberality of sentiment was given. On the contrary, the President was maligned and insulted, although in a print, which has been conducted in a manner so contemptible as to render it beneath notice.

The latest and most important event in the profession, has been the adoption by the College of fixed regulations in regard to education and examination; and of these important measures we have expressed our approval.

The New Medical Act has been fully explained in this Journal, so far as regards its influence upon the Dental Pro-

fession. Misty minds may cavil upon the effect of the Act as stated by us, but we believe, time will prove that we have been perfectly clear and correct in all we have advanced upon the subject.

Thus have we briefly reviewed some of the principal events we have been called upon to notice during the period of our editorial duties. If time and space would allow, we should like to have alluded to the long-neglected duty of founding a dentists' benevolent fund; but we must forbear.

In bringing these remarks to a close, we would call attention to the lamentable effects of disunion in the ranks of our profession: and we would earnestly counsel the leaders of both parties to use their utmost endeavours, irrespective of personal considerations, to forget all evils of the past, in order to secure a general reconciliation.

> "Urge the necessity, and state of times,
> And be not peevish found in great designs."

With the Quarterly Journal of Dental Science we have now done. Our labour upon it has been a labour of love, and we may say, with truth, that our one object has been to render it an organ of utility to the profession generally. As a scientific dental periodical, we have abundant proof that it has stood unsurpassed; and if we have not, on all occasions, and upon every subject, done our duty to perfection, let it be attributed to the necessarily limited time at our disposal, caused by the obligations of active professional life, instead of to any inclination to slight the literary responsibility.

In this address, we have thought it right to ourselves and to our readers, to touch upon subjects which we would had been buried in oblivion. Having touched upon them, we desire now to remember them no more; but rather prefer, writing as we are, on the verge of the anniversary of a day

which proclaimed peace on earth and good will towards men, to think no more of the wrongs of opponents; and, in acknowledging the many kindnesses of supporters, therefore, to all alike, we wish a HAPPY AND A PROSPEROUS NEW YEAR.

DENTAL SURGERY AND MECHANICS

GUN-SHOT WOUNDS IN THE MOUTH.

By JOHN COX SMITH, Esq., Chatham, Member of the College of Dentists, and Dentist to the Rochester, Chatham, and Strood Dispensary.

TOWARDS the close of the Crimean War, the Military Hospitals in Chatham were filled with patients suffering from disease and wounds. Mutilations of every conceivable description might have been witnessed by a visitor to their wards, and amongst them, as a matter of course, were some severe injuries in the mouth from gun-shot or other wounds received in service. The visits paid by Her Majesty will be well remembered, not only locally, but by the people at large; and at one of these, instructions were given to Dr. Dartnell, then P. M. O. at Chatham, that some of the worst cases should receive all the assistance that artificial aid could bestow, without reference to the ordinary rules of the service—the cost to be defrayed from Her Majesty's private purse. The Dental cases were placed under my care.

They deeply interested me, because they were grave exceptions to the ordinary routine of Dental practice, and excessively perplexing in their first aspects. Of diseases of the jaw I had seen plenty, but always regarding them as cases more fit for the Surgeon than the Dentist, had, save in two or three exceptional instances, never meddled with them.

But injuries to the jaw produced by violence seldom come under the notice of the dentist. In any attempt that I may make to render some of the cases which fell to my charge as intelligible as I could wish to the profession, I feel that I can but partially succeed, because engravings, and even models, can give but imperfect impres-

sions respecting them, for the following reasons:—The mechanical dentist has to bear in mind the necessity of adapting his constructions with reference to three distinct requirements. Firstly—that they shall fit their bases properly. Secondly—that they should not interfere with the tongue; and thirdly—that they should harmonize well with nature's covering for them, namely, the cheeks and lips. For success in the two latter, he must trust to his own observation and judgment, his art furnishing him with little to guide him. Practice enables him to do this with but little difficulty in most cases: but where the usual conditions of the last two are very much interfered with, he is met by difficulties the very nature of which he can only learn by watching, and are not easy to render perfectly intelligible to those who have not seen the case itself.

Unfortunately, I made very few notes, having then no intention of committing an account of them to print. The late organization of our profession that has taken place has, however, placed within my reach the means of communicating them to the only persons who are likely to feel interest in their details; and I have selected two of them for the best description I can offer, writing from memory.

John P——, private 75th Regiment.—Gun-shot wound in the upper jaw, the ball having passed through the right cheek, out under the left eye.

The external wounds were well healed: the appearance of the jaw is pretty well indicated by fig. 1.

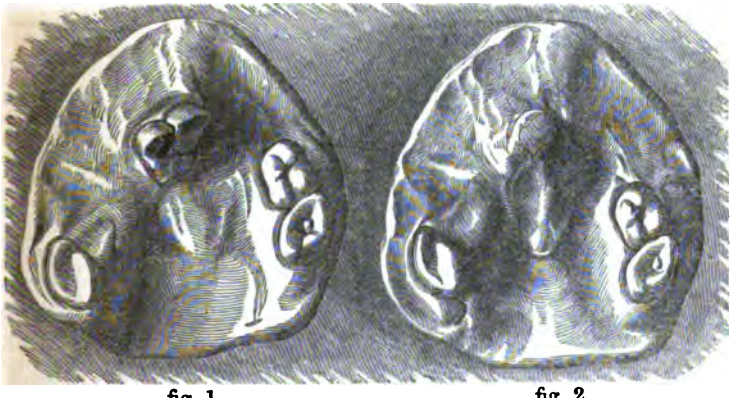


fig. 1 fig. 2

The *ossa palati* were broken and disunited, but covered by integument. Three clumps of teeth were remaining, namely, *dens sa-*

pientiæ on the right—left central and lateral in the middle—second molaris and *dens sapientiæ* on the left side; each of these were attached to portions of the upper maxilla, of what size it was impossible to determine, but disconnected with each other, and all very loose. They formed a small irregular triangle, much within the arch of the lower jaw; the two centrals, instead of being in their proper place—outside it, were nearly an inch behind it.

He was incapable of masticating even the softest diet—in fact, could not in any way hold a piece of paper between his teeth; and his tongue being so efficiently locked in, his attempts at articulation, were not more successful. I could not understand whether he intended to say yes, or no, to any inquiries I put to him. Thus it will be perceived, that the poor man was, though living in the world, existing as it were apart from it, under circumstances involving severe bodily privation, and it is not much to be wondered at if he felt, as he afterwards was enabled to explain, "that life was a misery to him."

It will be evident nothing could be done without the removal of the front teeth so very peculiarly placed, and this required extreme care. I dissected out the teeth carefully from the soft parts, and steadying the loose piece of maxilla with the two fingers of my left hand, successfully removed them, eschewing the aid of either forceps or key, and with no further ill results than the loss of about a pint of blood. For some time after the bone was quite bare, but by degrees the gum began to granulate, and in about three weeks the mouth was fit (fig. 2) to receive the mechanical appliance.

This consisted of a socket of hippopotamus ivory fitted to the upper jaw, bearing strong metal clasps encircling the molar teeth, and supported by springs to a metal lower frame.

Of course the appearance of the piece was exceedingly peculiar, but it does not require further description, experiment only could tell which were the places that would bear pressure. But though every trace of the alveolar ridge was destroyed, and the whole of the surface was newly healed, and almost all soft and yielding, the piece was worn with comfort almost immediately after its insertion. A large cicatrix on the right side of the mouth interfered very much with the action of the spring, the cheek had become attached to a surface which I wished to cover, and any alteration in the frame would have impaired its usefulness. I allowed the spring to work a way for itself, a little sloughing was the consequence, but as a cicatrix is not very vascular,

the inconvenience was slight, and my patient was soon discharged from further attendance.

The combined structure natural and artificial was exceedingly firm, and proved a valuable assistant to his otherwise helpless condition. I saw the man a year and a half afterwards; he was, and is now (for anything I know to the contrary) a porter in the Royal Household, Windsor; and a more perfect contrast in the stout, healthy man whom I should not have recognized, to the disfigured and emaciated military invalid of my earlier acquaintance, it is scarce possible to conceive. Perfect union had taken place between the disjointed fragments of palate, and the surface was firm and healthy, though of course very uneven.

William B——, private, 55th regiment, forwarded from St. Mary's for inspection and report. A gun shot wound in the lower jaw, destroying the symphisis and six front teeth, namely, four incisors, one canine, one bicuspid on the right side, together, with the ridge as far as the angle of the jaw, the ball finally lodging in the shoulder. Wounds well healed externally, a cicatrix only at points of entrance and exit being observable. The internal condition of the jaw was very peculiar and complicated.

Bisected into two unequal portions, the left containing *dens sapientiæ*, second and first molars, bicuspids, and canine, perfectly sound and intact. The muscular attachments perfect and motion easy, except that in a lateral direction is inclined towards the centre of the mouth, and any attempt made to bring it out in juxtaposition to the upper jaw, caused acute pain in the socket.

The right section consisted of *dens sapientiæ*, second and first molars, and second bicuspids, and the extremities of the sections were neatly rounded and covered with firm, healthy gum. The fang of the second bicuspid on the right side a little exposed, but bearing the appearance of healthy dentine. The upper jaw was exceedingly well developed, the teeth large, firm, and regular.

The state of this patient's mouth entailed much suffering and privation. Mastication was impracticable in the slightest degree, paper could be drawn from between the jaws, notwithstanding the patient's efforts to the contrary. His articulation was much affected, and his only posture for sleep was on his back, reclining on either side causing luxation of the corresponding section of the jaw. Under different circumstances, the relative positions the two sections varied, the right half following imperfectly the motions of the left. Thus, on opening

the mouth, the left portion only would be fully extended, the right riding loosely above it. (Fig 3.)

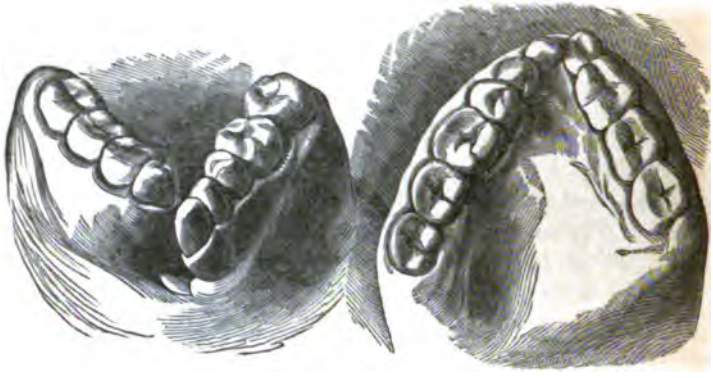


fig. 3 fig. 4

The above were the appearances the case presented, and as I could not sketch out any plan of treatment at the time, nor could I possibly obtain any correct model; all that I could do was to note the particulars of the case as well as I could, and appoint another visit.

I then succeeded in obtaining impressions of the jaw by means of two trays cut and bent for the purpose, and inserted a gutta percha plug moulded to fit the cavity, occupying the space of four teeth. On attempting further separation, so much pain was felt in the socket of the left section, that the patient refused to bear it.

I next constructed metal framework, separating the parts as much as possible, and capping the teeth freely, but could not succeed in fixing it, in consequence of the variable motions of the right side, which instantly unshipped the piece.

I then made metal framework, extending the sections, and supported by fitting carefully around the necks, and between the teeth, carrying it far back, for the purpose of distributing the strain as much as possible. The space thus gained was filled up by four incisors, soldered to the frame, and the result seemed very satisfactory.

This man had passed the Chelsea Board previous to his being sent to me, and was then waiting for his discharge, so the time at my disposal was limited, or I believe that I could have succeeded in replacing the whole of the six teeth. The illustrations represent the case :— (Fig. 3) when the mouth was opened; (fig. 4) the impression I procured at the first attempt; (fig. 5) the model subsequently

obtained, and to which the frame was ultimately made; (fig. 6) impression of the case when completed.

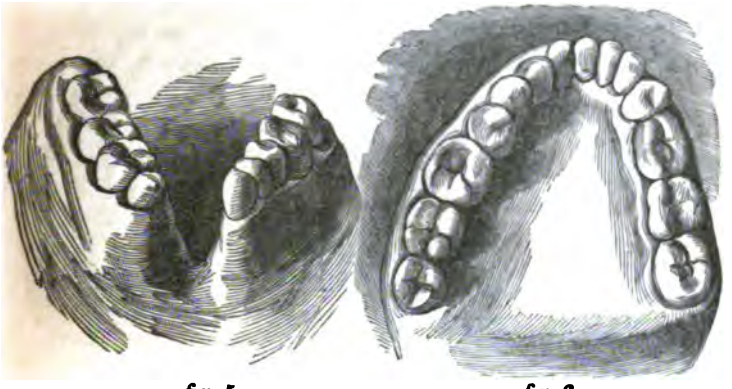


fig. 5 fig. 6

I submit these two cases (selected from several) to the notice of the profession, as instances of peculiar deformity and helplessness, consequent on severe injuries to the jaws, and illustrating the value of the art we practice, in the alleviation of even exceptional cases of human suffering.

ON THE INJURIOUS EFFECTS OF THE MERCURIAL AMALGAM INDISCRIMINATELY USED BY THE PUBLIC IN STOPPING TEETH.

By Thomas H. Harding, Surgeon-Dentist.

Many Surgical writers, speaking of the effects of Mercury as given in large quantities many years back, state, that the bones often assume a condition of chronic disease which is supposed to be due to the excessive administration of that mineral, and now and then the records of medical science illustrate the truth of this proposition by some instance—generally worm-eaten caries of the cranial bones—which is looked upon in a great measure as the consequence of the large amount of mercury takenby the unfortunate patient, at an early period of his disease. In the history of mercury, we find, that the most profuse and long continued salivation was a necessary part of treatment for the disease of which it is considered a specific. It is

probably certain, that mercury does in some way exert a deleterious influence on the bones; but this is mentioned here for the purpose of shewing, that if it is injurious to some of these organs, they include among others the teeth. As the inhalation of the vapours of phosphorus does produce destruction of the teeth, which subsequently leads to necrosis of the jaw, so does mercury, especially when placed in direct contact, destroy the teeth, although not often followed by such dire effects as necrosis of the jaw bone. I have, however, met with cases of diseased teeth with complete recession of the gums, which were clearly traceable to the administration of mercury as a medicine, until salivation was produced two or three times. Most dental writers assert, that the profuse administration of mercury is a grand cause of caries, by rendering the structure of the teeth more susceptible to inflammation. It may be said almost as a rule, that, those persons to whom mercurial medicines have been freely and frequently administered, have generally wretched mouths.

There is a preparation or paste in common use among dentists for stopping the cavities of teeth, known as the mercurial amalgam, composed of six parts of silver and ten parts of mercury. This paste produces such injurious effects upon the teeth, which it is intended to preserve, as well as some other local effects, that it induces me to pen a few observations against its use. I am the more anxious to do so, because it is not only extensively employed by dentists, but is even indiscriminately used by the public for stopping cavities, which cannot but prove injurious. Among the bad effects which have been observed, as resulting from its direct local influence, is extreme brittleness of the teeth, produced by its direct absorption which at the same time turns them of a black or blueish slate colour. No doubt the plugging of the cavity with the amalgam will for a time give relief, and allow of but imperfect use, but in a little while, the patient begins to observe he cannot use the teeth in mastication, there is some tenderness around them, and finally, on going to a dentist, he learns his amalgamized teeth are probably unfit to remain in his mouth. When improperly stopped with this amalgam, it produces sometimes a peculiar eczematous eruption on the face, particularly over the cheeks and the lips; this may, with great propriety be attributed to the oxidation and absorption of the mercury in the amalgam, which evinces its effects in the immediate neighbourhood of the teeth, from being conveyed along the minute lymphatic vessels. The general health is disturbed from the same cause, and there is a disposition to

catch cold, and suffer from facial neuralgia. It is, therefore, a local poison which should be avoided, and its pernicious influence is by no means checked from its combination with silver or any other metal. In a paper on the use of amalgams, Mr. Osmond has shewn, that the mercury is decomposed by galvanic action, from the contact of the smallest degree of acidity in the month. It is well known, that alloys have a greater tendency to oxidize than the single metals, and amalgams possess this in a marked degree, and as the mercury is removed from the amalgam, the surface of the plug assumes a dark colour, and the external surface of the cavity is equally so, from the infiltration of the dentine with the black oxide, which, I believe to have taken place. As Mr. Osmond observes, the dentine becomes the positive pole of the battery, and the plug the negative, and as a consequence the dentine is rapidly dissolved by the acid fluids contained between it and the plug, and hence, in my opinion, an explanation of the brittleness of the teeth. In some instances the plug may not shrink, but this will not the less prevent the mercury oxidizing and becoming absorbed by means of the lymphatic vessels of the dentine itself.

So that my observation on the presence of mercury within the substance of the teeth, should not be looked upon as a mere hypothesis: a friend chemically examined several teeth with me with the following results:—

Part of the crown of a bicuspid tooth, with a large cavity which had been filled with mercurial amalgam, was first tried. The enamel of the sides had a shiny distinct blueish tinge, and that which had been in contact with a neighbouring tooth was much more pronounced. It was very brittle, and a section of the base of the crown which surrounded the cavity, presented alternations of colour resembling the bands in a ribbon agate pebble; these bands were of various shades of light blueish grey. The edge of the tooth at this part was also transparent. Every trace of amalgam was most carefully removed, the tooth was then dissolved in dilute nitro-hydrochloric acid, and tested for the presence of mercury, which was found to be present in a minute quantity as shewn by the agents employed.

Four molars, with cavaties, from which the amalgam was also carefully removed, were dissolved in the acid and submitted to the same tests, when the presence of mercury was found to be a little more marked than in the previous experiment. This was repeated a third time with three other teeth with the like results. Evidence was

thus afforded of the presence of this mineral, most likely, in a state of black oxide, giving the peculiar colour to the teeth, and at the same time rendering them extremely brittle. The amalgam is as much used for its cheapness, as to suit the convenience of the dentist, from its being so easily placed within a cavity, taking much less time to complete the operation than when gold foil is used. However convenient, therefore, this paste may prove for the moment, the objections to its use are so potent, that I trust it will yield to the safer, surer, and more lasting method of employing the gold foil, which should be used at an early stage of dental caries. I would, at the same time, strongly impress on dentists, the necessity of examining the teeth of their patients periodically, without waiting for the actual presence of caries, so that a timely use of gold leaf, if that process is commencing, will effectually check its progress.

Park Square, Regent's Park,
November 1858.

NEURALGIA FACIEI.

Communicated by SAMUEL A. PARKER, Esq. Dentist to the Birmingham Dental Dispensary.

A case came under my notice some short time ago, the patient suffering from neuralgic pains in the face.

She consulted me respecting some artificial teeth, to fill up a considerable gap in the upper jaw.

Thinking the case instructive, and of some importance, I beg to transmit the particulars respecting it for publication in the pages of the *Quarterly Journal of Dental Science* :—

Jane ——, about twenty-six years of age, was sent to me for the purpose of having some artificial teeth made for the upper jaw.

Upon examination, I found a great number of stumps remaining, the gums painful and much inflamed, and the patient subject to violent pains in the head and temples, the pain at times being so intense that no rest could be obtained day or night. She had been in the habit of taking a considerable quantity of medicine for two years to allay the pain, but without the slightest benefit.

My course of action was at once decided, and I recommended the immediate removal of all the stumps, as the only remedy, for a speedy cure.

To this she hesitated for some time; but at length consented to have two out to begin with; which two I removed on the 11th of September last. Two more were removed on the 14th and 16th, three on the 18th, and two on the 20th of the same month, making altogether eleven stumps.

On the 16th she told me the pain was decidedly better, had taken no more medicine, and had passed good nights.

By the 20th the pain had entirely subsided, the gums had began to resume their healthy appearance, and the patient altogether quite recovered. In about two months afterwards she came, requesting the artificial teeth, being very impatient to have them, on account of the gap made by the removal of the stumps. I took the model, and by the 24th of November fixed them in, she finding them, in a few days, a source of great comfort, both for mastication and articulation.

This is one of those cases liable to come frequently under the dentist's care, but more frequently under the care of the medical practitioner. The case just alluded to was under medical treatment for more than two years, and yet in a fortnight after the removal of the stumps a perfect cure was established. It is a well-known fact, that until every remedy (excepting the right one) has been tried, the teeth are not suspected of being the cause of such pains.

The dentist is generally consulted as the last resource, when in point of fact he should have been the first.

I cannot conclude these remarks without quoting a few words from an admirable paper by Dr. Hardy, in the *American Journal of Dental Science*, for October 1849. The paper related to the "Pathology of the Mouth," and in the sixth page he says—"It is known to every well-informed physician and dentist, that cases have occurred, and are recorded, where patients have, year after year, taken medicine of every kind, and from the hands of the greatest variety of physicians, and all without avail; that such patients have, further, by the advice of their medical attendants, gone in pursuit of health, and for the removal of their diseases, pronounced to be beyond the reach of medical and surgical skill; have gone by the best medical advice for the cure of their several cases, to distant regions, crossing seas, scaling mountains, visiting springs, taking every variety of exercise, and every variety of diet, yet all of no avail—as they have severally returned home, with little or no improvement in their disease, which still exhibits the same character and unmanageableness as when they started on their tour.

"By some lucky or accidental suggestion, the *teeth* are suspected as the probable cause of the whole mischief, and with some degree of plausibility, as everything else had failed to give any relief.

"This suggestion is acted upon; skilful dentists are employed, and by correcting the diseased condition of the teeth and mouth, the before-incurable diseases often become readily curable, the general health speedily restored, and the whole of this wonderful change brought about, simply by the application of a little dental skill."

ELECTRICITY IN DENTISTRY.

By JONATHAN NASH HEARDER, Esq. Electrician to the South Devon and East Cornwall Hospital.

There is something in pain so thoroughly antagonistic to animal comfort, that both reason in men and instinct in the lower animals, alike prompt the avoidence of it. Hence the long category of narcotics, soporifics, and anæsthetics for blunting our nervous sensibilities and palliating the evil which cannot be shunned, often, however, by the substitution of another less objectionable because less painful.

The late discovery of the property of the electric shock to reduce or prevent pain under certain abnormal conditions, such as the disruption of tissues in the extraction of teeth, appears to open a new field for interesting investigation; and although, as is usually the case with every new scientific discovery, great varieties of opinion will exist in the minds of various experimenters, yet subsequent comparison of results will serve to reconcile many apparent anomalies, by tracing them to the varied circumstances under which experiments have been made, and the diversified character of the apparatus employed. It must not be considered at all surprising, if very conflicting evidence shall be obtained on the subject of the painless extraction of teeth by the influence of electricity, when the following facts are borne in mind, viz.—First, comparatively few of those whose peculiar province it will be to engage in this investigation, are sufficiently *au fait* in the use of electrical apparatus as to ensure that definite and invariable action which shall command an unerring degree of certainty in their operations; and, secondly, the electrical apparatus accessible to the experimentalist, are so numerous and so diversified in their construction, that it is next to impossible to find two machines of different makers, capable of producing the same results; nay, they some-

times differ so widely in their physiological effects, as to preclude the possibility of making any comparison between them; very few of them are so arranged as to indicate the direction of the current which is subject to reversals on changing the connection with the battery, a disadvantage of no small moment in dental operations. Without attempting to discuss the *rationale* of the local anæsthetic produced by electricity, I may simply remark, that thirty years of experience in its therapeutic application are sufficient to satisfy me that the results are quite compatible with the conditions under which they are obtained. Although a question may be raised, as to the possibility, or probability of one nervous sensation counteracting or neutralizing another, and experiments upon sound and healthy tissues may be adduced in argument against the results of experiments upon tissues subjected to violence; yet, until the precise amount of nervous susceptibility of a tissue in the act of being torn asunder shall be determined, and the behaviour of electricity to such a tissue shall have been thoroughly investigated, it must suffice to take the facts as they present themselves, and by classifying the physiological effects which are produced, to endeavour to establish a definite standard of operations for the attainment of the required object.

One step towards the accomplishment of this, will be the adoption of electrical instruments, whose action may be always depended upon, and with which any definite amount of power, susceptible of accurate and minute graduation may be obtained. Experiments which I have had an opportunity of making in conjunction with my friends of the dental profession, have been sufficient to shew that the amount of power required to produce the most desirable effect, varies not only with different constitutions, but with different parts of the same mouth, as comparatively trifling variations in the force of the shock with the same individual have produced varied effects. These have resulted either in a painless operation on the one hand, or the substitution of the less painful electrical sensation for the accustomed pain on the other.

A certain amount of familiarity with the use of the apparatus must be attained before the general results of experiments will assume a character which shall entitle them to be considered as established facts, capable of forming the basis either of sound reasoning or practical deduction.

Many years since, I was induced to turn my attention to the improvement of the electro-magnetic coil machine, so as to reduce its

size, increase its efficiency, and render it susceptible of very accurate and minute graduation. The practical information which I had acquired by extensive researches in electro-magnetism, enabled me, by properly apportioning the length and resistance of the primary coil to the electro-motive force of the battery, and by carefully adjusting the secondary coil to these first two elements, to obtain a greater range of power in a smaller space than had ever before been accomplished, added to which, I adopted a double system of subdivision which enabled me to introduce as many as even fifty equal and minute gradations of power, varying from an amount almost imperceptible to a force much greater than can be borne. For this improvement, I was honoured with the silver medal of the Royal Cornwall Polytechnic Society. I have recently modified the arrangement of the apparatus to suit the requirements of dentistry, and have rendered it so compact, that a little box six inches in length, six inches in height, and five inches in width, contains an electro-magnetic coil with sixteen degrees of power, Smee's battery, bottle of dilute acid, spring foot-board for interrupting the shock, insulated conducting wires, and shock handle to be held by the patient.

The machine and battery work in the box, the cover of which can be closed whilst they are in action. The degrees of power have been ascertained and adjusted by numerous and accurate dental experiments. I venture thus to hope, that I have succeeded in introducing to the members of the dental profession a machine which may be always depended upon as a uniform standard of comparison, amongst those who may employ it, the greatest care being taken not only to maintain the degrees of graduation exactly alike in all instruments, but to preserve a uniformity of action and a constant determinate direction of the current as indicated by the indices marked respectively positive and negative.

28, Buckwell Street, Plymouth,
October 1858.

FINISHING OFF AMALGAM STOPPINGS.

It is possible that the following method of finishing off an amalgam stopping may be unknown to some of the readers of the Quarterly Journal of Dental Science; and I think it probable, that many will

find it more convenient than burnishing; it gives the stopping a better appearance—makes it assimilate to the colour of the adjacent teeth, and takes the shine out of the stopping altogether.

Having stopped the tooth, place a bit of folded blotting-paper on the stopping, and desire the patient to close the opposing tooth upon it. In a few minutes, as the amalgam is setting, take a fitch-brush, about a quarter of an inch in diameter, cut roughly into a pyramidal form, and rub the stopping well until it is quite smooth.

The brush not only obviates the necessity of using the burnisher, but it rubs the stopping into the edges of the cavity more effectually—saves much time and trouble, and is more convenient to the patient.

T. PURLAND.

CORRESPONDENCE.

THE VULCANITE BASE.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—Your editorial remarks, in the October number, relative to the Patent for Vulcanite Base, call for some explanation from me on the subject; and to set your correspondents right, allow me to give the facts as they really stand.

In September 1851, Charles Goodyear obtained a Patent for "An Invention of Improvements in the Preparation of Materials for the production of a Composition or Compositions applicable to the manufacture of buttons, knife-handles, ink-stands, door-knobs, and other articles where hardness, strength, and durability are required;" which patent expires in September 1865.

Charles Goodyear, jun., obtained a patent for the *application* of Vulcanite to Dentistry in March 1855, for a period of fourteen years, which was allowed to expire in March 1858 from the non-payment of Government dues. This, however, in no way invalidates the elder Goodyear's first patent; in fact, this having been previously and successfully sustained in several actions at Law, it was considered

preferable to issue licenses under the original, rather than continue the expense of keeping up a second patent. The Patent of 1851 is so worded, that it covers and protects the Vulcanite material when used for any purpose whatever; hence, if it were adopted by an instrument maker for handles, by a jeweller for watch-cases, or by a dentist for artificial teeth, legal permission to use the material would be required in each instance.

The most complete reply to your correspondents, however, will be found in the following notice:—

"The undersigned Attorney for Charles Goodyear, Patentee of "the Hard Vulcanite Compound, has given Mr. C. S. Putnam full "and exclusive rights and privileges to treat with dentists who desire "to use it in their practice; and any one using it without legal per- "mission, will be dealt with in strict terms of the law.

"London, LEWIS HOPE,
"12th Nov. 1858. Attorney for CHARLES GOODYEAR."

Judging from the remark you make, page 384, some one is evidently anxious to ascertain particulars relative to your present correspondent; and feeling disinclined to parade too many of my failings before all of your readers, I should be happy to give the gentleman (I presume he is such,) fair answers on this point, if he would favour me with a private interview.

Seriously speaking, however, I take this opportunity of informing your readers, that I am in England for a short time, solely for the purpose of introducing the Vulcanite work to their notice; and in so doing, claim a right to dictate my own terms with due regard for the interests of other parties concerned.

Possessing, as I do, references which no one can question, and knowing the advantages which result to every one who adopts this work, whether his income from artificial dentistry be large or small, I feel no hesitation in urging all to give the subject prompt and careful attention.

I am happy to acknowledge the receipt of many valuable hints in the way of improvements for the process, since my arrival in this country, and they are all placed in proper columns; but having spent a greater part of my time during the last three years in experimenting, with a view to perfect the work, I feel free to ask not only the time, but the money of others, to the end that even greater perfection in every branch of it may be attained.

In conclusion, allow me to suggest to that class of dentists, who, as a general rule, follow rather than lead, that while they are waiting for an opportunity to profit without any outlay by the experience and labour of others, they are each day lessening the chances of an increasing and stable income, while, in the meantime, their competitors who adopted it long since, must gain a portion of their practice from the simple fact of giving a better style of work.

C. S. PUTNAM.

289A, Regent Street, London.

EFFECT OF ADULTERATED FOOD ON THE TEETH.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—In the number of your Journal, issued last January, there appeared the report of a paper read by Mr. Robert Thomson, before the President and Members of the College of Dentists, on the effect of adulterated food on the teeth.

The paper, at the time, gave rise to considerable discussion—objections were stated, which it appears Mr. Thomson replied to, but his replies to the objections, unfortunately, were not reported.

Two numbers of your Journal have since appeared, but though Mr. Thomson's paper has directly or indirectly given rise to more than one paper, nothing that can in any way be considered an answer has appeared.

I do not myself presume to answer it, but think it a pity that a subject of so much interest should be allowed to drop.

It is well-known to physiologists, and, doubtless, known also to most dentists, that colouring matters mixed with the food of animals will impart their colour to the bones. Is it not then probable that salts of mercury, copper, lead, and other mineral substances taken into the stomach in minute quantities, becoming part of the mass of the blood from which all parts of the body are formed, and deposited with the phosphate and carbonate of lime and other component parts of the teeth, by acting as chemical irritants, may render them liable to decay. Mr. Thomson justly remarks, that during the time the second set of teeth are in course of formation, most of those metallic preparations used as colouring matter in confections are consumed.

I dare say most dentists have remarked the ill effects of the fumes

of phosphorus used in making lucifer matches, also lead fumes, upon the teeth and gums; how the lead poison manifests itself by a lived line along the margin of the gums; the phosphorus vapour produces caries of the maxillary bones.

I will not trespass farther upon your space than to express a hope that Mr. Thomson may again, and more fully, be induced to treat the subject.

I enclose my name and address, and am, Sir,

Yours obediently,

M.R.C.S.—L. S. A.

"THE TEETH OF PAST AND PRESENT GENERATIONS," AND "SAVAGE AND CIVILIZED TEETH."

To the Editor of the Quarterly Journal of Dental Science.

SIR,—In the July Number of your Journal, I ventured to make some remarks upon these interesting subjects. In speaking of the progress of mankind, I took various cities, such as London, Paris, Glasgow, New York, &c. as "*types*" of civilization; and I pointed to the *children's teeth*" of these cities, and said, or implied, "that civilization had not produced *sound teeth* in the children of the present generation," and expressed my conviction, "that children's teeth were worse than they used to be;" in other words, worse than their parents, grand parents, and great grand parents, or ancestors. I gave no theories in reference to what civilization is, or what it ought to be. It was not a question with me, whether man in his wisdom or his folly understood human nature, and the conditions essential to its happiness. I neither took the *pretty* parts, or the bad parts of civilization; but simply pointed to the teeth of children as my answer to the supposition, "that as duration of life in cities increases, *teeth must be better* than formerly;" and I will now, with your permission, give some American opinions upon the subject.

I am, &c.

Glasgow. JAMES HORNE.

"I deem it a truth, that more than one-half of the children are born into the world with congenital, or natural defects of the teeth."—J. G. RUSSELL, M.D., *Baltimore.*

"While in Sierra Leone, from time to time, I have enjoyed an excellent opportunity to notice the teeth of some twenty different tribes from all parts of Africa, north, south, east and west. They *all have better teeth* than the whites of America, and those most lately from the slave ships *much the best.*"—J. CUTLER TEFT, *Kaw Mendi, West Africa*—July 17, 1853.

"Rarely, if ever, did I remark a mouth disfigured by a disgusting array of black and decayed teeth and stumps, such as so frequently, in our own enlightened land, offends in more ways than one, the sense of the Dental Surgeon."—*Remarks upon the Teeth of the Natives of India—Dental Register of the West.*

"All the *Indians* we have been able to examine, possess a full and regular denture; and *all accounts* concur in giving them teeth that possess in an *eminent* degree the conditions we have denominated endurance, viz.: health, size, density of structure, and regularity. If the climate and products of the soil from the Hudson to the Mississippi are capable of producing a race of Antochthanes, possessed of the most perfectly developed physical frames, with constitutions and teeth little liable to disease, they surely are not deficient in those ingredients necessary to produce the same results in the descendants of the Angles and Saxons; and any inferiority in them must be attributed to inherent weakness, or acquired vices."—W. A. PEABE, "*On the Degeneracy of American Teeth.*"

"We believe that one of the great causes of the *deterioration* of the teeth of the present age, is the use of soft food. We frequently see the teeth of children coated over with a kind of white paste, and the enamel softening as if they were being macerated in a dilute acid, and in a short time fall a prey to decay, and are prematurely lost."—PROFESSOR WHITE, "*On Soft Food.*"

"An eminent author, Tomes, who has made the relative durability of the teeth a special subject of investigation, found that out of 3,000 extracted for various reasons, 1,126 were anterior molars, and that 68¼ *per cent.* were removed from persons *under* 15 years of age."—Dr. M'QUILLEN, "*On the Interior Permanent Molars.*"

"It would seem that this affection (caries) is *increasing* in our

cities, or from some unknown cause, we *annually* see more of it. It seems to be no respecter of persons. It attacks the school Miss, the industrious house-wife, and it attacks the wealthy.—Professor White, "*On Caries and Necrosis of Bone.*"

"The extreme frailty of the human teeth of the *present age*, especially in the *rising generation*, and the indications of an *increased* frailty in the coming generation, very naturally directs the inquiring and philosophical mind to the investigation of the causes of this *increasing* degeneracy."—Dr. Louis Jack, "*On the Predisposition to Dental Caries, &c.*"

Is there a Degeneration in the Teeth? If so, to what is it attributable?

By Wm. A. Prase, of America.

"Twenty-five or thirty years since dentistry was comparatively in its infancy. None of the improvements we now possess had been made, or if they existed in a crude shape, they were such ghostly simulacra that none but the owl-eyed could discover in them the lineaments of their descendants. From that time to the present the improvements have been so rapid, they have followed so closely upon the heels of one another, we have been filled with a constant surprise, and have found little leisure to examine them and see to what good they conduce, or whither they go.

It will fall within the scope of this paper to examine the condition of the human mouth then, as compared with it at present: to note the several successive changes that have occurred, whether induced by natural or artificial causes; trace them to their sources, and form an estimate of their present and prospective importance, not only as effecting the condition of the mouth, and exerting considerable influence upon it; the habits and physical health of society will be glanced at in different eras, to determine what effect, if any, they exert upon the teeth, or have exerted upon them within the authentic period of dental history. And art will be subjected to a slight inquisition to discover, notwithstanding its pretensions, if society derives from its labours a benefit commensurate with its expectations and the solid dollars it pays for them.

In the absence of dental data and dental records that afford us direct and positive light, we will have to resort to the indirect and unwritten, which, under certain circumstances, are held to be as con-

clusive and authoritative as the written, and like the common law, are quoted and respected. Thus, we have no reports founded on the careful collection and digestion of a large number of cases, showing the time that will elapse before decay will appear in a tooth after a set of artificial teeth has been attached to it. Yet few dentists of much experience and observation will doubt that decay will commence, in a majority of cases, within a few years; and in a young subject, though it may be partially arrested by art, will ultimately destroy the tooth.

In taking twenty-five years as the initial of our retrospect, we will not have passed beyond the period of persons now living, who were then on the stage of life and occupying a similar position with their children, now in the meridian of life, whose mouths we wish to compare together; and we will not be deprived of their auto-dental history, and the means they enjoyed, or had recourse to, to preserve their teeth (if any) as compared with what are now employed.

In so short a period there can be no palpable contrast, but much of that sameness and those general features will be observed, both in lineaments and constitution, that hereditacy produces—the children will represent the sire, and this generation the preceding; and it is precisely for this reason we examine them, to see how closely the resemblance holds good, and if there is a difference, to discover in what it consists, and what are its distinguishing characteristics. Whether, as art and science advance, the teeth partake of the improvement—are stronger, healthier, and more enduring, from the increased means for insuring their health which science affords; or, in despite of the aid of science, there is a visible deterioration—a tendency to contract disease, with less power of resisting it. We have frequently examined the teeth of father and son, mother and daughter, and occasionally we have had three or four generations together, and have taken models to institute a more minute examination at our leisure. In these examinations the hereditary tendency has been observed, and the peculiarities that sometimes overleap one generation to find in the cross of the third the peculiarity of temperament favourable to their development. At times we have seen the same peculiarities descend continuously in the same family through several generations, as is generally the case, where the family lineaments are preserved. But there was this difference, the physical health and power of resisting disease in the teeth was nowhere observed to descend with the family configuration and

expression. *The teeth now seem to be more porous*, and to be permeated by a greater number of blood-vessels and nerve filaments; and we have failed to observe, as is generally inculcated, that these porous teeth eventually become dense. That they increase in density, we are prepared to admit; that their minuter cells or canaliculi are sometimes obliterated is equally obvious; but that any length of years, or course of diet, will produce that density of structure which characterizes their ancestors' teeth, is improbable. There appears to be an exaltation of the vascular and nervous dental system that is not hereditary but acquired, which seems under certain circumstances to increase, subject to what limits, if limitable, we are ignorant.

If we recur to New England, where families can be more easily and certainly traced; where some of the descendants of the first settlers still remain near the original homestead; where the family history is cherished and better preserved, and peculiarities of the ancestry (if unwritten) are handed down from generation to generation, I think we can establish the following points, viz.: 1st, In a given population now and twenty-five years since, between the ages of twenty and thirty, there will be found a greater number who have lost teeth now than then. 2nd, Disease commences earlier and runs a more rapid and destructive course, notwithstanding the greater care bestowed upon the teeth now than then.

The better to institute a direct comparison to determine whether the young now starting in life possess as good physical health and teeth as their early ancestors—whether the lamentable loss of the teeth now so generally witnessed, is the result of a want of skill in dental practitioners, or arises from causes beyond remedial control, we will take the patriarch, the venerable Maj. H——, as a type of the physical and dental health of the earlier inhabitants of this country. He shouldered his musket and followed several older brothers to the army, and helped to win his country's independence, and still lives, a hale old man, surrounded by a numerous progeny, to enjoy the fruits of his early toil. He has recently lost the partner of his youth, manhood and old age. We do not select him as an isolated case, but because we are familiar with his history, have had frequent occasion to operate on the teeth of some of his descendants, and have examined them with that care that enables us to speak with confidence of their condition.

Other similar cases might be easily adduced, but this one will

suffice. Major H—— was but little above the medium size, strong, healthy and firmly knit—of a sanguine nervous temperament.

His teeth, never white, were of a clear yellowish caste, of a dense structure, and large, for a man of his size. His wife, his equal in years and health, was his superior in fullness of person, though possessed of no extra flesh; her temperament was a nervous billious, and her teeth were as healthy as his own; and within a few years we have extracted some of them, free from caries, but loose from alveolar irritation. If they are credible witnesses, their teeth, when young, were no better than the generality of their neighbours—several of whom we have personally known, among whom toothach was not a common occurence, and the loss of a tooth was unfrequent.

If we assume, then, that theirs was a fair type of the teeth one hundred years since, as I think we safely can, we will have a starting point, or standard, to which to refer in our subsequent investigations and observations. That their children should possess their characteristics, physically and dentally, will be expected, which they do to a certain extent. The oldest children inherit the father's temperament and physical and dental peculiarities, while the younger more nearly resemble the mother. All of them have lost some teeth, generally unnecessarily, and two sisters have worn partial superior sets since fifty years of age. The one, principally from tartar accumulations and alveolar irritation; the other's teeth perfectly antagonized, and the incisors became worn away to the gum.

In the children in the next descent, the change in the dental development is more marked; the size of the teeth is not as great, and there is a plain diminution in the quantity of the inorganic matter they contain; and though still large, strong and healthy, they are more obnoxious to the attacks of caries, and require the aid of the dentist to plug them before they arrive at the meridian of life; indeed, a son and daughter early wore pivot teeth.

Now, it cannot be objected that the children of Major H—— married into a less vigorous and healthy stock, and, *ergo*, their children's teeth are impoverished, and lack the inorganic matter to interpose a successful barrier to the attacks of disease; for there was an equality of dental and physical health in the various families with which they intermarried. Their health and teeth are not above the average of the community in which they reside, while their habits are nearly the same, and their children are subject to the same edu-

cational, social and climatic influences as their neighbours, and to the same general hygienic and operative treatment.

We now come to the last generation—the great grand children of Major H——. They are not yet as numerous, though some of them have their full denture, and consequently display all the physical and dental characteristics necessary to this inquiry. Again, it is proper to remark, they have been within the pale of the same influences as others of their age, have suffered from like causes, received no better attention, and present a fair average of dental health. If their teeth are slightly above the average in size, there is not sufficient difference to constitute a noticeable feature, nor is the destiny of their structure, or the perfection of their enamel particularly in their favour; and there seems to be a predisposition to caries similar to that observed in others of their age, which, if unmolested, would doubtless run a rapid and destructive course.

It is no part of our purpose, in selecting Major H—— as a standard, to present an isolated or extreme case. We seek a fair representative of New England people—a type of the age. We do not think he was endowed with a greater measure of health than his early and manly associates, though from accident and disease, they have one by one disappeared; often after passing the three score and ten years. The heads of the families, whose children united with his, though none of them attained quite so great an age, were nevertheless venerable and long lived, and their children show no visible indication why they may not follow long in their course. None of them or their children have derived but little if any benefit from dentistry, and their children's children, now between twenty and forty years of age, have not contributed much to dental support; but *their* children now bid fair to present to the profession a liberal honorarium.

The review of the denture of these four generations may be concluded under the following heads :—

1. There is a difference in the expression of the children's teeth now, as compared to their early ancestors.

2. There is a difference in the constitution of the teeth; the fourth generation possess less of the inorganic matter than their early sires.

3. There is a difference in the size of the teeth, and the regularity and fulness of the denture.

4. There is a difference in the period and manner of carial attack, its type, and the rapidity of its course.

And, finally, we think there is a difference in the resistance they offer to luxation."

[Our space will not allow the publication of the remainder of the extracts from Mr. Pease's paper sent us by Mr. Horne.—*Ed.*].

MR. LONGHURST'S PAPER ON CONGELATION—REPLY TO MR. WILLIAMS.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—I have merely to state, in reply to Mr. Williams's letter, in your last number, that I have been familiar with the use of the second tank for lengthened graduation for the last three years. My description purported to be that of the apparatus known as "Blundell's Patent," *minus* the thermometer. I could have mentioned several additions and modifications, such as mouthpieces, in ivory and gutta-percha, modelled to the various teeth and parts of the mouth, as cases prompted; but, as I have before said, the apparatus as supplied by the patentees, with such trifling modifications as an ordinary amount of intelligence dictates, will be found efficient (so far as it goes) in nineteen cases out of twenty.

If Mr. Williams can discover a paradox in the paragraphs he quotes, I have only to remark, I am too obtuse to see it. And lastly, if he considers mere parsimony, or want of time, a sufficient excuse for the neglect and apathy with which it is regarded by the profession, the fact is much to be deplored.

Respectfully your's, SIDNEY LONGHURST.

London, November 1858.

CAUTION TO DENTISTS AND SURGEONS.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—A man of a rather ill-looking cast, but very insinuating in his manners, about five-feet ten-inches in height, very yellow complexion, dark eyes, whiskers and moustachios, teeth dark, dirty, and uneven, and the left central upper tooth broken off, has for some months honoured the profession by making appointments to consult

respecting his little girl. Of course the fellow never returns; but contrives to pocket an instrument, a set of teeth, or anything of value.

The writer of this caution was favoured with a visit on Tuesday, the 12th October. He wanted the front tooth replaced; the impression was taken, and an appointment made for Thursday, at twelve! During the interview, this ingenious individual contrived to abstract a set of teeth, mounted on gold, that had been left for repair, and which the writer has had to make good.

The fellow is well dressed, and carries a loose coat or cloak on his arm; says he came from New York, and is returning in a few days; and from his manner, appearance and ingenuity, is supposed to be an American.

I am, SIR, your obediant servant, T. PURLAND.

P.S. His manner of offering to "leave a deposit" was excessively droll!

MR. HUMBY'S PAPER ON THE BLOWPIPE.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—In the lecture lately given by Mr. Humby, at the College of Dentists, it was stated by that gentleman, that he had given up the use of the mouth blowpipe, because it affected his health. My experience is so different to that of Mr. Humby, that I cannot help stating, I think he could not have used the mouth blowpipe in the right way. A little exercise of weak lungs, so far from doing harm, rather tends to strengthen them. It is not, however, hard puffing and blowing that is required for using the blowpipe. The air should be drawn principally *through the nose*, to produce the blast, and by making use of the mouth and cheeks judiciously, time and patience will give the student a knack of employing the blowpipe without the least inconvenience. I have no doubt, that much more command can be obtained over the work by the mouth blowpipe than by any substitute.

Your's, &c.

A MECHANICAL DENTIST.

MR. PATRICK AND THE COLLEGE OF DENTISTS.

To the Editor of the Quarterly Journal of Dental Science.

SIR,—My attention having been drawn to a letter in your last number, complaining of the omission of Mr. Patrick's name from the list of gentlemen who formed the Provisional Committee, in the organization of the College, and being anxious to correct any error I may have inadvertently made, I beg the insertion of this note, in reply to the writer of the letter in question.

I perfectly remember that Mr. Patrick was one of that Committee, now his name has been brought under my notice; but it certainly escaped my memory *then*—or I can assure Mr. Patrick, and his friend also, that there should have been no ground for complaint in this direction. My object was to make an impartial statement of facts, and if I erred, it was not in *intention;* and, as far as Mr. Patrick is concerned, I knew him as little as I knew all the other gentlemen on the Committee, so that I trust he will feel I had no motive in the matter. His friend remarks—"There may be other omissions, which I have not observed." All I can say is, I shall be equally obliged to him if he can point them out; and *quite as ready* to apologise for, or if possible *amend them*, as I am in this instance; but I feel that, as "one of the Provisional Committee," his corrections would have been more appropriate had they have come a little closer upon the appearance of the paper; nevertheless, it is never too late to mend; and I hope Mr. Patrick will see that I have done all that I could after making an error, viz.—to acknowledge and regret it.

I am, SIR, yours, &c.,

The Writer of "THE ORIGIN AND DEVELOPMENT OF THE COLLEGE OF DENTISTS OF ENGLAND."

EXTRACTS FROM DENTAL PERIODICALS.

SALIVARY CALCULUS,

BY A. C. CASTLE, M.D.

From the American Journal of Dental Science.

Salivary calculus, the offensive deposit upon and around the teeth, has of late years received a large share of practical attention from Dentists, authors, and others, but not to that extent which its peculiar

importance demands. Its character has indeed been the subject of many theories, some of which, if not ridiculous, are humourous, from their very absurdity, whilst others have been deserving respect. Some authors have supposed this substance to be "*exhaled*" from the gums; others, quite as unique in their theory, think that it is built up by animalculæ (and, who, even go so far as to illustrate their character), similar to the construction, or rather building up of "coral reefs," and numerous dental practitioners, in common with popular opinion, ascribe its presence to the absence of cleanliness.

It is computed that from twenty-four to twenty-eight ounces of saliva, in quantity, is secreted into the mouth every *twenty-four hours*. It will, therefore, be observed, that the elements of the saliva, in the process of digestion, exert a more important position and influence than its *apparent* insignificance would lead the ordinary observer to suppose. Its elementary or constituent principles, in health, are mucilage, albumen, iron phosphate, and oxalate of lime, and phosphate of ammonia and magnesia, and alkaline in its nature. In disease, especially in apthous children, and those under the influence of scrofulous, phthisical, and gout diseases, the saliva is more or less acidified.

Chemical analysis shows the following compositions of the soluble and insoluble matter which forms the basis of *salivary calculus*.

The constituents soluble in water :—

Tribasic phosphate of soda (3 Na O, PO)	28 . 122
Chloride of sodium and potassium	61 . 930
Sulphate of Soda	2 . 315

The constituents insoluble in water :—

Phosphate of lime	.
" of magnesia	.
" of peroxyd of iron	5 . 509
Loss	2 . 124

The chemical composition of the substance of the teeth is as follows :—

THE IVORY OR BONE OF THE TEETH :—

Phosphate of lime	61 . 95
Fluate of lime.....	1 . 10
Silica	1 . 00
Carbonate of lime	5 . 30
Phosphate of magnesia	1 . 25
Soda and chloride of sodium	1 . 40
Cartilage (animal matter) and water	28 . 00

THE ENAMEL OF THE TEETH :—

Phosphate of lime	85 . 33
Fluate of lime	3 . 00
Silica	1 . 75
Carbonate of lime	8 . 00
Phosphate of magnesia	1 . 00
Animal matter and water	1 . 22

ASHES OF THE HUMAN BLOOD (Berzelius).

Tribasic phosphate of soda	22 . 1
Chloride sodium	54 . 769
——— potassium	4 . 116
Sulphate of soda	2 . 461
Phosphate of lime	3 . 636
——— magnesia	0 . 769
Oxyd of iron, with phosphate of iron	10 . 77

THE FŒCES OF ADULTS (Berzelius) :—

Tribasic phosphate of soda	2 . 633
Chloride of sodium and alkaline sulphates	1 . 367
Silica	7 . 940
Sulphate of lime	4 . 530
Phosphate of Lime " of Magnesia	80 . 373
Phosphate of peroxyd of iron	2 . 090

Here, in the latter, are found 4 . 000 soluble, and 94 . 933 insoluble salts.

PULMONARY MUCUS (Nape) :—

Water	955 . 320
Solid residue	44 . 480
Mucin	22 . 750
Albumen	1 . 004
Watery extract	8 . 006
Alcoholic extract	1 . 810
Fat	2 . 887
Chloride of sodium	5 . 825
Sulphate of soda	0 . 400
Carbonate of soda	0 . 198

Phospate of soda..... ..	0 . 080
Phospate of potash, with traces of iron ..	0 . 974
Carbonate of potash..	0 . 291
Silica and sulphate of potash	0 . 555

Thus, throughout the organized portions of the animal system, all the several constituents are found in each, only varying in quantity in the various portions analyzed. The saliva, then, most evidently supplies an important part in the animal economy, by largely entering into the chemistry of digestion, and the formation of the blood. Were this not the case, it would be difficult to account for the large quantity of saliva secreted during the twenty-four hours—swallowed and absorbed—to be re-secreted and purified for its important action as an animal flux, to unite the food and prepare it for the action of the gastric juices, to dissolve it into chyme, chyle, &c.

In its normal condition, the saliva is alkaline, and gives off ammonia. The evaporation of a drop of saliva causes a beautiful crystaline arrangement similar in form to hydrochlorate of ammonia. I look upon salivary calculus in all respects as being analogous to, and identical with, certain urinary calculi. It partakes of all their physical appearance, consistera, mottled strata, hardness, softness, friableness, &c. Salivary calculus is capricious in selecting spots for its deposit; but most generally is found on the inside of the lower incisors, and mostly on those teeth of imperfect combination of their elementary and physical constituents, for example, in constitutions of strumous or tubercular diathesis. It is rarely found in perfectly organized teeth, except at periods of sickness, of those possessing sound, vigorous constitutions, and healthful secretions.

On those latter teeth, salivary calculus is unique; it is seen forming in semicular or crescent-like lines, encircling the necks of the teeth, close to the enamel, under the edge of the gums, where it blends with the laminæ of the bone of the necks and fangs of the teeth. It is very hard and brittle, requiring considerable force to remove it from its adhesion; it fractures with a sharp clicking sound. Its hardness has enabled me to make a tolerable good polish upon its surface. I have found this peculiar "tartar" to be more destructive to the *alveoli* than all other deposits and vicious secretions of the stomach and mouth, and in proportion is the cause of the greatest loss of sound teeth to the animal economy. It adheres to the neck of the tooth with the greatest tenacity, as it were, and it gradually progresses, insinuating

itself down the fang or fangs of the teeth; irritating the buccal absorbents, always most bountifully supplied in this region, to remove the exciting cause of irritation. In place of which, the absorbents act upon the vital parts, *the exposed alveoli*, the gums still irritated, and still striving to protect the alveoli, curl over their edges, leaving bare the necks of the teeth, and so the process continues, until the bony sockets, or support of the teeth, are entirely removed, and the teeth are left completely denuded and exposed.

This is popularly termed scurvy in the gums; many of my professional brethren too, treat it as such. This deposit of the saliva, I have seen insinuate itself gradually down to the apex and into the dental nerve foramen of the tooth, and there so irritate the nerve, as to cause the most intense neuralgia along the branches of the fifth pair of nerves. I have seen the dental nervous twig that entered the foramen, leading into the nervous canal of the tooth, severed by this tartar, and I have also seen the tartar insinuate itself into the foramen itself. The dento-alveolar periosteum being pressed upon and pushed from the neck of the tooth by this concrete deposit, as I have said, carrying by absorption the alveoli with it, the teeth, in a perfectly sound state, fall from their positions. Gastric acids act upon the dento-alveolar periosteum precisely in the same manner; that it is not unusual to see teeth drop from the mouth in a perfect clean and sound state. Hence, in many cases, where the gastric acids have alternately acted upon the surface of the teeth fangs with the salivary calculus deposits, the concretion has penetrated so deeply, perfectly, and densely, into the newly made pores, as it were, of the bone, as to require the removal of a portion of the surface of the bone, to relieve it from its embrace. Microscopic examination discovers this calculus to exist in a crystaline state.

The next form of salivary calculus is the soft, friable, sand-like concretion, while the oxalate of lime deposit is partially characterized as above; we here discover two kinds, the simple phosphate of lime, and the ammoniaco-magnesia-phosphate of lime, with the usual compound mixture of animal and extraneous matter.

Salivary calculus is never deposited on the flesh, but only on such substances as represent the teeth, or the nuclei, as in the bladder, that offer a surface to receive the deposition of the calculus upon them. Hence, salivary concretions are found deposited on artificial bone or porcelain teeth; or the gold and silver, or "continuous gum" plates to which the teeth are attached; to the living and dead fangs of teeth;

but never in or upon the alveolar processes. The activity of the excited absorbents connected with the gums, embrace the alveoli, and gradually absorb them away.

Salivary calculus is sometimes found in the *Whartonian duct*, in one form known as *ranula*. It has been extirpated from this *duct* as large as a hazel nut. A singular present made to the Anatomical Society in Paris, by M. Robert, exhibits a hog's bristle, (forced into the duct by a shoemaker) densely covered with a hard salivary concretion.

As the analysis of the teeth above, shews that the teeth are alkaline in their chemical combination, or, in other words, are *neutral*, so the saliva is composed of the same constituents, and is also alkaline. This is a wise provision; upon it the safety and health of the teeth alone depend. We find, however, destructive agents present, and almost always ready to make an onslaught upon the teeth. These agents present themselves in the form of *gastric acids*; the two most powerful of which, and between which and the limy constituents of the teeth, the greatest possible affinity exists, are the phosphoric and oxalic acids. When present, these acids act immediately, slowly, and persistingly in combining with, and softening the teeth, and as is sometimes seen, the actual burning, as it were, of the tooth, as if intense heat had been applied to the edges of the enamel round the decay, and I had reduced it to its original elementary *lime*. Thus, between health and sickness, the normal and abnormal condition of the gastric secretions and generations, the teeth are found, by the dentist, remaining either in a sound condition, irritable, painful or otherwise, or slowly or quickly progressing, with chemical decomposition of a portion or all the substance of the tooth or teeth. In this manner, the teeth remain healthy, or they are gradually being destroyed. Thus, then, is salivary calculus an important element in the natural economy of the system, and it is thus formed, if phosphoric or oxalic or any other acid be generated in the stomach in excess, it is forced by certain actions—laws—into the mouth. Here they meet the lime held in solution and immensely poured forth in the saliva; they chemically unite with these lime solutions, and form, with them neutral substances in the form of phosphate or oxalate of lime, phosphate of soda, &c. in accordance with the acid presenting itself. A great portion of this "tartar" is swallowed, and the rest adheres to the teeth, which, to a great extent, it protects by its presence from the further onslaughts of the acids, which, no doubt, was its original

intention. As we often find the very cough, which is the effort of nature to expel and relieve an irritating viscid phlegm from the mucous lining of the bronchia, is, in its turn, the chief cause of irritation and mischief; so we find, with regard to the teeth, the good intentions of nature subverted; the efforts of nature to protect the teeth from the acids by the salivary neutral deposits, by those very deposits cause the ruin of that, she would preserve.

Salivary calculus, then, will often be found, so far from injuring the teeth, to preserve them; unless the acids are in excess, when the peculiar action upon the teeth, alveoli and periosteum, are excited or superinduced, causing the loosening and their falling from the jaws.

The soft, friable muco and muco-puriform salivary deposits, will more often be found on these teeth of imperfect formation or combination of their constituents, such as chalk, white or chalky-yellow teeth; or transparent white and transparent yellow teeth, and particularly in these *mottled* teeth where the deposits, during their formation, had been interrupted.

In a strumous or phthisical diathesis, where the teeth are found of pearly beauty and almost painful regularity, or the contrary—as the two extremes are often to be found in such diathesis, where the teeth are large, malformed, irregular, crowded or overlapping each other, the peculiar cachexia increases the exhalations of these acids, which, in their turn, stimulate and excite the salivary glands to pour out its alkaline matter in larger quantity; hence, an enormous quantity of salivary concretion is deposited. Again—as in *mercurial*, *quinine* or *acid* diathesis (and sometimes acid saliva accompanies gouty or rheumatic diathesis), then we find an acidified, purulent, viscid, salivary deposit, eating away the substance of the teeth with the greatest rapidity, rendering them, at the same time, exquisitely painful to the touch, whether of the finger nail, a quill, or a metal tooth-pick.

Again, the saliva deposits an acidified, greasy, viscid, greenish matter on the teeth of strumous and rickety children, which soon blackens the substance of the teeth, and corrodes them to the gums. This is also to be observed in children whose parents' constitution partake of a consumptive diathesis. I know of no deposit upon the teeth so acrid, destructive and painful as this acidified green matter. It is often the cause of local and great constitutional irritation, irritating the origin of the nerves in the sensorium and the recurrent or reflex action upon the nerves of respiration; the parvagum and its recurrent branch, dyspnœa, short or quick breathing, and all the

concomitants attending affections of the nervous system, are exhibited. How often *hydrocephalus* is superinduced in children from this cause, would be impossible even for mental speculation to elucidate.

In mothers of a strumous or phthisical diathesis, whilst nursing, and even during gestation, acid tartar is deposited in large quantities, eating its way under the gums into the necks of the teeth, and destroying them. It is a common observation made by mothers, that they "lost" one or more teeth at each period of gestation. In addition to this increased deposit in mothers nursing, they find the debility or want of "tone," *vis visæ*, exhibited by numerous canker sores on the gums, and on the inside of the cheeks and lips.

Would your limits permit, I believe that I could carry out this subject to an interesting extent. I will, therefore, conclude this paper on the subject of cleanliness. While I admit the importance of cleanliness to the animal economy, I am free to admit that it does not preserve the teeth from chemical decomposition, *i. e.*, "decay." Cleanliness is important thus far. It gives tone and vigour to the gums, causing them closely to embrace the necks of the teeth, which protects the necks from the lodgments of acids and tartar deposit, and it whitens the teeth. Still, the dentist finds daily visits made to him by persons and youth who cleanse their teeth after every meal, morning and at night, asking professional aid; and so the wear and tear, and natural chemical decomposition of the teeth, proceed until artificial substitutes supply their place. Why is this so? Because the system of our population is in a cachectic state. There is no stamina arising out of causes which the subject in question makes inadmissible here. Compare the well-educated, the refined, the well-living population of our own country with the thousands—nay, millions, of the masses of ignorance, filth and degredation visiting our shores; observe the teeth of these emigrants who are as ignorant of, and unacquainted with, dyspepsia and indigestion, as they are the use and appliance of the teeth brush—observe these people, with a thirty to sixty years of encrustration, hiding, nay, actually burying under over half a century's accumulated filth, the finest and most perfect teeth that ever ornamented "the human face divine." These people know not neuralgic affliction. All they know in regard to their teeth, is their instructive application.

New York, March 17, 1858.

ON THE HARDNESS OF METALS AND ALLOYS.

By F. Crace Calvert, M.R.A. of Turin, F.C.S., &c.; and Richard Johnson, F.C S., &c.

[Read before the Literary and Philosophical Society of Manchester]

From the Journal of the Society of Arts.

The process at present adopted for determining the comparative degree of hardness of bodies, consists in rubbing one body against another, and that which indents or scratches the other is admitted to be the harder of the two bodies experimented upon. Thus for example:—

Diamond,	Iron,
Topaz,	Copper,
Quartz,	Tin,
Steel,	Lead.

This method is not only very unsatisfactory in its results, but it is also inapplicable for determining with precision the various degrees of hardness of the different metals and their alloys. We therefore thought that it would be useful and interesting if we were to adopt a process which would enable us to represent by numbers the comparative degree of hardness of various metals and their alloys.

To carry out these views we devised the following apparatus and method of operating. The machine used is on the principle of a lever, with this important modification, that the piece of metal experimented upon can be relieved from the pressure of the weight employed without removing the weight from the end of the longer arm of the lever. The machine consists of a lever, with a counterpoise and a plate, on which the weights are gradually placed; the fulcrum bears on a square bar of iron, passing through supports. The bar is graduated, and has at its end a conical steel point, *7mm.* or 0·275 of an inch long, *5mm.* or 0·197 of an inch wide at the base, and *1·25mm.* or 0·049 of an inch wide at the point which bears on the piece of metal to be experimented on, and this is supported on a solid piece of iron. The support, or point of resistance is lowered or raised by a screw, and when therefore, this screw is turned, the whole of the weight on the lever is borne by the support and the screw. When it

is necessary, by turning the screw the weight on the lever is re-established on the bar, and experimented upon.

When we wished to determine the degree of hardness of a substance, we placed it on the plate, and rested the point upon it, noticing the exact mark on the bar, and then gradually added weights on the end of the lever until the steel point entered *3·5mm.* or 0·128 of an inch during half an hour, and then read off the weight. A result was never accepted without at least two experiments being made, which corresponded so far as to present a difference of only a few pounds. The following table gives the relative degree of hardness of some of the more common metals. We specially confine our researches to this class, wishing the results to be practically useful to engineers and others who have to employ metals, and often require to know the comparative hardness of metals and alloys.

Names of Metals.	Weight Employed.	Calculated Cast Iron=1000.
Staffordshire Cold Blast Cast Iron—Grey, No. 3	4800 lbs.	1000
Steel	4600 ?	958 ?
Wrought Iron*	4550	948
Platinum	1800	375
Copper—pure	1445	301
Aluminium	1300	271
Silver—pure	1000	208
Zinc „	880	183
Gold „	800	167
Cadmium„	520	108
Bismuth „	250	52
Tin „	130	27
Lead „	75	16

* This wrought iron was made from the above-mentioned cast iron.

This table exhibits a curious fact, viz., the high degree of hardness of cast iron as compared with that of all other metals, and although we found alloys which possessed an extraordinary degree of hardness, still none were equal to cast iron.

The first series of alloys we shall give is that of copper and zinc.

Formulæ of Alloys and per centages.		Weight Employed	Obtained Cast Iron =1000.	Calculated* Cast Iron =1000.
		lbs.		
$Zn\ Cu_5$	Cu 82·95, Zn 17·05	2050	427·08	280·83
$Zn\ Cu_4$	Cu 79·56, Zn 20·44	2250	468·75	276·82
$Zn\ Cu_3$	Cu 74·48, Zn 25·52	2250	468·75	276·04
$Zn\ Cu_2$	Cu 66 06, Zn 33·94	2270	472·92	261·04
$Zn\ Cu$	Cu 49·32, Zn 50·68	2900	604·17	243·33
$Cu\ Zn_2$	Cu 32·74, Zn 67·26	Broke with 1500 lbs. without the point entering.		
$Cu\ Zn_3$	Cu 24·64, Zn 75·36	Broke with 1500 lbs. with an impression ½*mm.* deep.		
$Cu\ Zn_4$	Cu 19·57, Zn 80·43	Entered a little more than the above; broke with 2000 lbs.		
$Cu\ Zn_5$	Cu 16·30, Zn 83·70	Entered 2*mm.* with 1500 lbs.; broke with 1700 lbs.		

* To calculate the hardness of an alloy we multiplied the per centage quantity of each metal by the respective hardness of that metal, added the two results together, and divided by 100. The quotient is the theoretical hardness.

These results show that all the alloys containing an excess of copper are much harder than metals composing them, and, what is not less interesting, that the increased degree of hardness is due to the zinc, the softer metal of the two which compose these alloys. The quantity of this metal must, however, not exceed 50 per cent. of the alloy, or the alloy becomes so brittle that it breaks as the steel point penetrates. We believe that some of these alloys, with an excess of zinc, and which are not found in commerce owing to their white appearance, deserve the attention of engineers. There is in this series an alloy to which we wish to draw special attention, viz. the alloy Cu Zn, composed in 100 parts of

Copper	49·32
Zinc	50·68
	100·00

Although this alloy contains about 20 per cent. more zinc than any of the brasses of commerce, still it is, when carefully prepared, far richer in colour than the ordinary alloys of commerce. The only reason that we can give why it has not been introduced into the market is, that when the amount of zinc employed exceeds 33 per cent., the brass produced becomes so white that the manufacturers have deemed it advisable not to exceed that proportion. If, however, they had increased the quantity to exactly 50-68 per cent., and mixed the metals well, they would have obtained an alloy as rich in colour as if it had contained 90 per cent. of copper, and of a hardness three times as great as that given by calculation. In order to enable engineers to form an opinion as to the value of this cheap alloy, we give them the degrees of hardness of several commercial brasses:—

Commercial Brasses.		Weight Employed	Cast Iron=1000.	
			Obtained	Calculated
		lbs.		
"Large Bearing"	Copper..82·05 *Tin ..12·82 Zinc .. 5·13	2700	562	259
"Mud Plugs" ..	Copper. 80 *Tin ..10 Zinc ..10	3600	750	262
"Yellow Brass"	Copper..64 Zinc . 36	2500	520	258
"Pumps & Pipes"	Copper..80· *Tin .. 5·0 Zinc .. 7·5 Lead .. 7·5	1650	343	257

* These alloys all contain Tin.

The alloy Cu Zn possesses another remarkable property, viz. the facility with which it is capable of crystallizing in prisms half an inch in length, of extreme flexibility. There is no doubt that this alloy is a difinite chemical compound, and not a mixture of metals, as alloys are generally considered to be. Our researches on the conductibility of heat by alloys, recently presented to the Royal Society, leave no doubt that many alloys are definite chemical compounds.

On Bronze Alloys.

Formulæ of Alloys and per centages.		Weight Employed	Obtained Cast Iron =1000.	Calculated Cast Iron =1000.
		lbs.		
$Cu\ Sn_5$	Cu 9·73, Sn 90·27	400	88·33	51·67
$Cu\ Sn_4$	Cu 11·86, Sn 88·14	460	95·81	59·56
$Cu\ Sn_3$	Cu 15·21, Sn 84·79	500	104·17	68·75
$Cu\ Sn_2$	Cu 21·21, Sn 78·79	650	135·42	84·79
Cu Sn	Cu 34·98, Sn 65·02	At 700 lbs. the point entered one half and the alloy broke.		
$Sn\ Cu_2$	Cu 48·17, Sn 51·83	At 800 lbs. the alloy broke without the point entering.		
$Sn\ Cu_3$	Cu 61·79, Sn 38·21	At 800 lbs. the alloy broke in small pieces (blue alloy).		
$Sn\ Cu_4$	Cu 68·27, Sn 31·73	1300 lbs. divided the alloy in two, point not entering 1*mm*.		
$Sn\ Cu_5$	Cu 72·90, Sn 27·10	The same as the preceding.		
$Sn\ Cu_{10}$	Cu 84·32, Sn 15·68	4400	916·66	257 08
$Sn\ Cu_{15}$	Cu 88·97, Sn 11·03	3710	772·92	270·83
$Sn\ Cu_{20}$	Cu 91 49, Sn 8·51	3070	639·58	277·70
$Sn\ Cu_{25}$	Cu 93·17, Sn 6·83	2890	602·08	279·16

The results obtained from this series of alloys lead to several conclusions deserving our notice. First, the marked softness of all the alloys containing an excess of tin; secondly, the extraordinary fact that an increased quantity of so malleable a metal as copper should so suddenly render the alloy brittle, for the

Alloy $Cu\ Sn_2$

or

Copper .. 21·21
Tin ..... 78·79 } is not brittle,

whilst the Alloy Cu Sn

or

Copper .. 34·98
Tin ..... 65·02 } is brittle.

Therefore the addition of 14 per cent. of copper renders a bronze alloy brittle. This curious fact is observed in all the alloys with excess of copper, $Sn\ Cu_2$, $Sn\ Cu_3$, $Sn\ Cu_4$, $Sn\ Cu_5$, until we arrive at one containing a great excess of copper, viz., the alloy $Sn\ Cu_{10}$, consisting of copper 84·68 and tin 15·32, when the brittleness ceases; but, strange to say, this alloy, which contains four-fifths of its weight of copper, is notwithstanding, nearly as hard as iron. This remarkable influence of copper in the bronze alloys is also visible in those composed of—

$Sn\ Cu_{15}$,	containing	88·97	of copper
$Sn\ Cu_{20}$,	„	91·49	„
$Sn\ Cu_{25}$,	„	93·17	„

Copper acquires such an increased degree of hardness by being alloyed with tin or zinc, that we thought it interesting to ascertain if alloys composed of these two metals would also have a greater degree of hardness than that indicated by theory; we accordingly had a series of alloys prepared in equivalent quantities, aud these are the results arrived at :—

Formulæ of Alloys and per centages of each.		Weight Employed.	Obtained Cast Iron = 1000.	Calculated Cast Iron = 1000
		lbs.		
$Zn\ Sn_2$	Zn 21.65 Sn 78.35	300	64.50	60.83
Zn Sn	Zn 35.60 Sn 64.40	330	68.75	82.70
$Sn\ Zn_2$	Sn 47.49 Zn 52.51	400	83.33	110.00
$Sn\ Zn_3$	Sn 37.57 Zn 62.43	450	93.70	124.58
$Sn\ Zn_4$	Sn 31.14 Zn 68.86	505	105.20	131.22
$Sn\ Zn_5$	Sn 26.57 Zn 73.43	600	125.00	142.08
$Sn\ Zn_{10}$	Sn 15.32 Zn 84.68	580	120.83	158.33

These results show that these metals exert no action on each

other, as the numbers indicating the degrees of hardness of their alloys are rather less than those required by theory. Our researches on the conductibility of heat by the three above series of alloys throw, we believe, some light on the great difference which the alloys of bronze present as compared with those of tin and zinc, for we have stated above, that the latter conduct heat as a mixture of metals would do, and not as the former series, which conduct heat as definite chemical compounds.

We shall conclude by giving the degrees of hardness of two other series of alloys, viz., those composed of lead and antimony, and lead and tin. In the series of lead and tin, we find that tin also increases the hardness of lead, but not in the same degree as it does that of copper.

Lead and Antimony.

Formulæ of Alloys and per centages.			Weight Employed.	
			lbs.	
$Pb\,Sb_5$	Pb 24·31 Sb 75·69	.....	....	Entered 2·5*mm.* with 800 lbs.; then broke.
$Pb\,Sb_4$	Pb 28·64 Sb 71·36	.....	....	Entered 2·7*mm.* with 800 lbs.; broke with 900 lbs.
$Pb\,Sb_3$	Pb 34·86 Sb 65·14	.....	875	
$Pb\,Sb_2$	Pb 44 53 Sb 55·47	.....	....	Entered 2·5*mm.* with 500 lbs; broke with 600 lbs.
$Pb\,Sb$	Pb 61·61 Sb 38·39	.....	500	
$Sb\,Pb_2$	Pb 76·32 Sb 23·68	.....	385	
$Sb\,Pb_3$	Pb 82·80 Sb 17·20	.....	310	
$Sb\,Pb_4$	Pb 86·52 Sb 13·48	.....	300	
$Sb\,Pb_5$	Pb 88·92 Sb 11·08	.....	295	

LEAD AND TIN.

Formulæ of Alloys and per centages.		Weight Employed.	Obtained Cast Iron = 1000.	Calculated Cast Iron = 1000.
		lbs.		
$PbSn_5$	Pb 26·03, Sn 73·97	200	41·67	23·96
$PbSn_4$	Pb 30·57, Sn 69·43	105	40·62	23·58
$PbSn_3$	Pb 36·99, Sn 63·01	160	32·33	22·83
$PbSn_2$	Pb 46·82, Sn 53·18	125	26·04	20·09
PbSn	Pb 63·78, Sn 36·22	100	20·83	19·77
$SnPb_2$	Pb 77·89, Sn 22·11	125	26·04	18·12
$SnPb_3$	Pb 84·09, Sn 15·91	135	28·12	17·23
$SnPb_4$	Pb 87·57, Sn 12·43	125	26·04	17·08
$SnPb_5$	Pb 89·80, Sn 10·20	110	22·92	16 77

We have great pleasure in thanking here Mr. Siméon Stoikowitsch, F.C.S., for his valuable assistance during these long researches.

ON THE USES OF BLEEDING IN DISEASES.

Read before the Royal Medical and Chirurgical Society, Tuesday, November 23rd 1858, by W. O. MARKHAM, M.D., F.R.C.P., Physician to St. Mary's Hospital, and Lecturer on Physiology and Pathology, at St. Mary's Hospital School.

From the Lancet.

The object of the author is to show, that by arguing from certain admitted facts respecting the effects of bleeding, a rule of practice may be deduced indicating the right application of the remedy in diseases. The conclusions at which he arrives are these :—

1. There is no proof that venesection has any *directly* beneficial influence over the progress of inflammations, either *external* or *internal*. On the other hand, the injurious effects of large bleedings, especially

in those inflammations in which the integrity of the lungs is seriously compromised, have been often demonstrated.

2. Nevertheless, venesection is, at times, of great service *indirectly* in the course of inflammations, and of all other diseases which occasion congestion and oppression of the heart, by removing this *secondary* consequence, which arises accidentally out of the inflammation.

3. In all cases in which venesection is of service, it acts alike, viz.—by relieving the cardiac congestion: it neither arrests nor modifies beneficially the inflammatory process.

4. A marked distinction is to be drawn between the effects of bleeding in inflammations and the local abstraction of blood from an inflamed part. Local abstraction of blood materially influences the inflammation, reducing the most characteristic of its phenomena—the pain, the heat, the redness, and the swelling; but it only influences, in this way, *internal* inflammations when there is a direct vascular connection between the part inflamed and the part whence the blood is drawn.

5. It is not denied that local irritation of an external part may influence an internal inflammation (even when there is no direct vascular communication between the skin and the inflamed part) by reflex action, conveyed thence from the skin through the vaso-motor nerves of the inflamed part.

The author demonstrates the inefficacy of venesection over internal inflammations in two ways:—First, by arguing of what is *seen* of its inutility in external inflammations; and, secondly, by the fact of the large and general concurrent testimony of modern experience, which has proved that large bleedings—the only bleedings which have any manifest influence over inflammations—are often very injurious, their good effects being dubious and disputed.

Venesection has been long since abandoned in the treatment of external inflammations, because of the danger and inutility of the practice; and though less easily traced in the case of internal inflammations, the same conclusion has gradually forced itself on the minds of observers. The practice is no longer regarded as essential in their treatment; but the author cannot believe that physicians have been, during so many ages, and still are, acting under a delusion as to the services rendered by venesection in internal inflammations. He, therefore, endeavours to explain the discrepancy by assuming the po-

sition—that venesection, as regards internal inflammations, is of service, not through any *direct* influence which it exercises over the inflammatory process, but in consequence of its removing certain of the *secondary* consequences which arise accidentally out of the inflammation—to wit, the oppressed and congested condition of the heart. He asserts that venesection is never required, excepting when this congestion of the heart exists; but at the same time observes, that there are congestions of the heart, and periods in the course of all congestions, in which no relief can be hoped for from the remedy. Modern experience justifies this position: for venesection is rarely ever practised now, except in those diseases in which this congested condition of the heart necessarily plays a prominent part. The benefits, indeed, of venesection, become more clearly manifest in proportion as the disease for which it is practised produces a higher degree of this congestion. As illustrations of this, cases are related in which the original disorders, provoking this congestion of the heart, lay respectively in the heart itself, in the lungs, in the abdomen, and in the brain. In all of them the same condition of the heart, and the same symptoms were present, claiming a similar treatment. The relief given by venesection, in three of these cases, was immediate and permanent; in two of them, no inflammation existed; and, in the third—one of pneumonia—the venesection had no influence over the *inflammation* of the lung, for the stethoscope demonstrated that the portion of lung inflamed was in the same condition of consolidation the day after as on the day of the bleeding; in the fourth case—injury of the head—the man was not bled, and died, the immediate and only apparent cause of death found, being extreme congestion of the heart and lungs. Bleeding, it is believed, would have saved this man's life.

He offers the same explanation of the benefit of venesection in wounds of the lung, long before inflammation exists, and he thinks that the same circumstances explain the relief of pain often attendant on pneumonia, which, while occasionally due to pleurisy, he thinks more frequently produced by cardiac congestion—a pain which is sometimes felt when there is no pleurisy, or may not be felt when pleurisy is present. In certain conditions of disease of the heart, and great vessels, in injuries of the head and apoplexy, and even in peritonitis, the benefits occasionally following venesection may all, he thinks, be referred to the relief of cardiac congestion. Such an expla-

nation seems to the author clear and simple, and in complete accordance with our physiological knowledge, and our practical experience; and with reference to any other beneficial and direct actions, which venesection is supposed to exert over inflammation, he observes, that all our knowledge of the effects of venesection has not yet enabled us to show what those other actions are; and all our modern experience manifestly tends to prove that venesection has no directly beneficial influence over inflammations, but that, if large, it acts injuriously by weakening the system, which has to sustain the force of the inflammatory process.

If the facts here maintained be correct, then it necessarily follows that the objects of, and indications for, venesection become clear and definite, and that a rule of practice may be established from their consideration. It also follows that venesection is now-a-days less frequently practised than is desirable; that it must have been of service in other days, just as it is of service now; that it is requisite now, just as it was requisite then.

The author then refers specifically to venesection in pneumonia. Here there are two main special facts to be considered, which contra-indicate to a certain extent the venesection: 1st, the diseased condition of the lungs, which produces the cardiac congestion, cannot be removed by the bleeding; 2nd, the loss of blood is, so long as the pneumonia lasts and in proportion to its extent, an irreparable loss. Hence it follows, that the more extensive the inflammation, and the more urgent the symptoms, the greater is the danger of venesection; and in fact, just in proportion as the bleeding is more required to relieve the heart, is the practice of it less applicable. In pneumonia, the function of the chief sanguificating organ of the body is arrested; and therefore to take away blood at such a time is to take away what cannot be restored so long as the inflammation lasts. The loss of blood, which might be borne with impunity in other inflammations, seriously compromises the future of the patient in this inflammation of the lungs. Venesection, he says, is applicable in pneumonia when the general symptoms have arisen rapidly and are severe, and when the inflammation is limited, as in the case related, when the urgency of the symptoms is, so to say, out of proportion to the extent of the inflammation, as measured by the stethoscope; that is, when the aërating processes are not seriously and extensively compromised. The object of the venesection is, in all cases, to relieve the heart from its tem-

porary embarrassments. When the congestion of the organ is the consequence of its own partial paralysis, then of course venesection cannot restore to it its equilibrium.

With reference to the local abstraction of blood, Dr. Markham points out the importance of vascular connection between the skin and the inflamed organ, reasoning from the analogy of external inflammations. The benefit of leeches in pneumonia he refers simply to the attendant inflammation of the parietal pleura, and thinks that in pericarditis the pain is frequently due to concomitant pleurisy, and is relieved in the same way. In endocarditis he believes they can be of no service; nor can they draw one drop of blood from an inflamed liver or kidney. In such cases he conceives that the benefits attributed to cupping or leeches may be due to other remedies employed at the same time.

The author makes no attempt at any explanation of the mode of action of either venesection or local abstraction of blood. If the facts stated be true and rightly interpreted, their practical deduction may be accepted, without waiting for any theoretical explanation of them.

Dr. Mayo, after passing a high eulogium upon Dr. Markham's paper, proceeded to say that he agreed in the main with the views advanced by the author, in respect both to local and general bloodletting. He thought, however, that we required more definite information as to the necessity of general bleeding in cases of apoplexy. He related a case in which forty ounces of blood were taken away with immediate and complete relief. General bleeding was now almost prohibited in apoplectic seizures, but he thought that this was to some extent a mistake. He agreed with the author, that the simultaneous employment of bleeding and stimulants was not inconsistent in certain diseases; for whilst the one unloaded the vessels, the other exhilarated, and by the combined measures the circulation was accelerated. Even in neuralgic cases, the administration of steel was occasionally rendered beneficial by the previous extraction of a few ounces of blood. In periostitis, bleeding often rendered the disease more manageable, and in case of severe sprain of the ankle, attended by intense neuralgia, which had come under his observation, the extraction of seventy ounces of blood by Mr. Wardrop had been followed by complete relief. The life of the patient was, however, for some time placed in jeopardy.

Dr. J. A. Wilson alluded to the great prevalence of bleeding a quarter of a century ago. He thought, that in certain cases, even of

intense hysteria, bleeding might be applied with great advantage. He related a case of this affection, which had supervened upon great mental emotion, and the symptoms of which were immediately arrested by the copious abstraction of blood. Bloodletting was not resorted to in inflammation for the direct relief of that condition, but to restore action and relieve the circulation. Bleeding, in years gone by, was no doubt carried to an unjustifiable extent, but at the present time he thought we had gone to the opposite extreme. Cases occurred to him in consultation, in which the abstraction of eight or ten ounces of blood was evidently indicated, but in which he found the greatest difficulty in obtaining consent to that proceeding. No general rule could be laid down as to the necessity of abstraction of blood; in fact, every case must be judged of by the symptoms exhibited to the practitioner. He ridiculed the notion which had lately prevailed, that Englishmen were now less able to bear the loss of blood than formerly, because, forsooth, they had degenerated in physical power. No doubt the effects of bloodletting were better understood now than formerly, but he emphatically denied that there was any degeneracy in the constitution of English people. On the contrary, better education and better food had improved the constitution of the people of this country; and if the necessity for the copious abstraction of blood should again arise, they would be found to bear it as well, if not better, than they did in former times.

Dr. Druitt contended that Dr. Markham was wrong in asserting that any single circumstance was sufficient in itself to explain the beneficial effects of bloodletting in inflammation. Theory must succumb to practice; even if theory were advanced in support of the non-abstraction of blood, logical deductions might be drawn to show its fallacy. Thus, if it was contended that blood was in excess, bleeding undoubtedly reduced the quantity of that fluid. If the blood were of too high a specific gravity, bloodletting reduced it. If it was necessary to aërate the blood, bleeding rendered that process more easy.

Dr. Webster differed with the author with respect to local bloodletting in internal inflammations. He had found that in inflammatory diseases of the chest in children the abstraction of the blood by cupping was often of the greatest service. It was nothing new to find the practice vary in regard to the employment of bleeding. It had been the case from the earliest periods; bloodletting being, at one time, almost constantly employed, whilst at another time it was almost

completely abandoned. Disease assumed different types at different periods. This might explain why bleeding was less resorted to now than twenty years ago. But it must be remembered that the time might soon arrive when the necessity for bloodletting would again be indicated.

Dr. Sibson coincided in opinion with Dr. Markham, as to the importance of local bloodletting in cases of local inflammation. He thought, however, that he had taken too confined a view as to the effects of general bloodletting. Dr. Markham had considered that the pain in pneumonia was attributable to direct obstruction in the heart itself; but this opinion was contradicted by the fact, that the pain, in nine cases out of ten, was restricted to the seat of inflammation. In these cases the pain was the result of pleuritis, and was relieved by the local abstraction of blood. In pneumonia, bleeding was of essential service, not only from the relief it afforded to the heart itself, but by the influence it exerted in preventing the extension of the disease. But it must be remembered that there were other cases besides those mentioned in the paper, in which bloodletting afforded great relief, independent of removing any obstruction in the circulation of the heart; such, for instance, as in cerebral congestion. Whatever might be said with respect to other inflammations, venesection in cases of pneumonia was beneficial. In most other inflammations, blood could be abstracted by side currents; but in pneumonia, as every drop of blood had to pass through the inflamed lung, and there was a diminished channel for its course, it was incumbent that its quantity should be diminished.

Dr. Markham having replied, the society adjourned.

ROYAL COLLEGE OF SURGEONS AND THE GENERAL MEDICAL COUNCIL.

A conference was held on Monday, the 20th Dec., at the Freemasons' Tavern, of the Members and Fellows of the Royal College of Surgeons, to consider the recent vote of the Council of the College in electing, to the exclusion of the Members and Fellows, a Member to the General Council of Medical Education and Registration, and to take such steps as might be necessary to secure the corporate rights of the Members and Fellows. The chair was taken by John Lavies, Esq., F.R.C.S.

The Chairman observed, that they were there that evening

to defend rights which had been recently infringed. They were aware, that by a bill passed last session, a Council was to be appointed by the several medical bodies, but the provisions of the statute had not been carried fairly into effect. According to the different charters of the College of Surgeons, the Members and Fellows were the corporate body, and not the Council of twenty-four. There was no doubt, that Mr. Green, the gentleman elected by the Council, was a fit representative, but that was not the question: It was, whether the Members were to be chosen by the Council, or by the body of surgeons.

Mr. Bottomley, of Croydon, moved the first resolution, which was to the effect, "That, in the opinion of this conference, the Council of the Royal College of Surgeons of England, having excluded the Members and Fellows of the College from a voice in the election of their representative to the Council of Medical Education and Registration, under the Medical Act, have thereby invaded the corporate rights of the Members and Fellows, and infringed the provisions of the said Act, and that in the opinion of this conference, a principle is involved which would subvert the representative right granted to the Members by the said Act."

Dr. Williams seconded the motion. He contended that, by a false interpretation of the Act passed last session, on the part of the Council of the College of Surgeons of England, they took upon themselves to select a gentleman for the General Council of Medical Education and Registration, instead of leaving it to the entire body of the Profession. The words in the Act were "The College of Surgeons," and he contended the meaning of the words "College of Surgeons" was the whole body of Practitioners, and not the Council.

The resolution was then put and carried.

Dr. Ladd moved the second resolution—"That the conference cordially approve of the proceedings of the Committee, and empowers them to move another day for a Public Meeting, to obtain the views of the Profession with respect to their corporate rights."

Mr. Pocock seconded the motion, and it passed unanimously.

The Meeting adjourned to a day to be named; and a cordial vote of thanks to the Chair ended the proceedings.

THE COLLEGE OF DENTISTS IS TAKING ROOT!

WHERE ARE THE PROTESTORS?

By Samuel Lee Rymer.

The College of Dentists of England—This is a title well known throughout the world, as indicating a body of practitioners, bound by constitutional laws to act with justice alike to the profession and the public. It so happens, that the College was not brought into existence by any clique, but by the legitimate process of public organization. Previously to the establishment of the College, a little party of dentists existed, who met together, occasionally, for the purpose of contemplating their own positions with satisfaction. Ultimately the effect of these evening parties was to give to those frequenting them such exaggerated notions of their own importance, that they imagined "all the talents" of the profession were centred in themselves; and so treating the twelve thousand Dentists of England, including the majority of the most eminent, with contemptuous indifference, they constituted themselves the legislators of the profession. But the College of Dentists was about to take its place amongst our public institutions, and the announcement of this fact brought to light all the back-parlour movements of the "Memorialists." Instead of gracefully apologizing for the mistake they had made, these gentlemen, with characteristic obstinacy, refused to join the publicly formed society, and they thought that a display of their names in connection with the Memorial, would stop the forward movement. It had a contrary effect, their presumption was justly condemned, and later, when they formed themselves into a "Society," it was found that the glitter of their names failed to attract the practical sense of the English Dentists in their favour. However, all the influence of the "Society" has been exerted, from its formation to the pre-

sent time, to crush the College of Dentists, and *it has been exerted in vain.*

The College was vigorous when only a few months old—a united Council watched over its interests, with the full confidence of the Members. A few months later, and the spirit of the serpent appears to have been communicated to *one at least* on the Council, and the evil spirit *spread* and *spread.* How came the evil spirit into that united Council? Perhaps the jesuitical influence of the disappointed—But it is needless to speculate on the matter—there *was* the evil spirit. Apparently faithful allies became treacherous, some deserted, others became mutinous. Hence the blow aimed at the College, on the rejection of the insulting terms offered by the "Society," to condescend to receive the noble element of strength contained in the College by reason of its *legitimate organization.*

Certain Members of the Council had been raised through the instrumentality of the College from obscurity. Upon the rejection of the offensive terms of amalgamation, they felt themselves obliged to surrender their places to others. Having done so, the demon of jealousy appears to have taken possession of their breasts, and they employed themselves in endeavouring to destroy the very institution which had brought them into notice.

With the advantage of a knowledge of the internal affairs of the College, these misguided men lent themselves the willing tools of arrogant assumption, and a laborious endeavour was made to crush the College, by a "*Protest.*" *The endeavour did not succeed.*

Meanwhile the Members had placed the management of the College in the hands of men of business; no party-men, but practical honest men, who determined not to enter into controversy or to provoke opposition. Their duty was clear, and they made up their minds to do it. The ordinary meetings were regularly held and provided for. The Laws were modified to meet the more developed requirements of the College. The Legislature was influenced in regard to the

exemption of the profession from damaging clauses in the New Medical Act, and lectures of the utmost value and interest were provided. The Council were right. If they had descended to disputation or controversy, they could not have served the profession so well as they have done. Now, the attendance at the College Meetings, and Lectures, is most gratifying, and the prospect of a considerable increase of Members is apparent, whilst the intention of carrying out an educational system will not fail to place the College on a footing with the first analagous institutions in the world.

Well, then, may the oppositionists exclaim—WHERE ARE THE PROTESTORS? Where are those worthy individuals who once protested, with so much vehemence, that they would stand by the College though all others forsook it? Where are those who protested so loudly, and in such very strong language, at the doings of the opposition "Society"? And where are those who protested so inconsistently against the Council of the College, elected on their own recommendation?—Echo answers—Where? A late librarian and curator tells us, *he* cannot find them, although he has sought diligently: they will not trust him. July the 8th 1858, witnessed a curious scene. It reminds one of the Sultan of Turkey, encouraging his followers at the outbreak of the Crimean War, by courageously and emphatically exclaiming, in the presence of an assembled multitude, that he intended "to buckle on the sword of his ancestors *in the spring!*" The Sultan spoke in the autumn. Spring came, but the Sultan, no doubt, upon consideration, looking upon discretion as the better part of valour, made up his mind to keep his sword within its sheath. On the 8th July, the Members of the College of Dentists were favoured with a warlike display, very like the Sultan's. It was the presentation of the "*protest.*" The presentation over, the excited and noisy supporters of the protesting champion marched from the College, with so complete a theatrical effect, that it was evident many careful rehearsals of the piece had taken place.

The Obstructing "Society" read accounts of the exploits of the Protestors in their own Anti-British print, including a list of the names of the parties said to be Protestors, many of whom had had nothing whatever to do in the business. But the "Society," or rather the two or three persons who, practically, form the executive, were unaware that the printed list would not bear the test of authenticity, and so they thought the valiant band, who were so heroic on the 8th July, would continue in their exertions, and do—*not* their duty

But the question presses—Where are the Protestors? Are they ashamed of themselves? If they have any shame in them they *ought to be:* but from what has recently come to light it would seem as if the protestors are *quarrelling amongst themselves.* They will not trust one another—deserters seldom will. The champion of the Protest will not answer an "Ex-Librarian's" letter, and the "Ex-Librarian" makes a clean breast of it by publicly stating the fact, although still breathing threatenings and slaughter against the College; so that, if the College of Dentists is to be "crushed" through anybody connected with the Protest, it will be so by *one* who may answer—"Alone I did it!" It is possible the "Ex-Librarian's" trouble to injure the College may not yield him the looked-for satisfaction. Unfortunately, *no one* appears to repose confidence in him. The expressed conviction—that it is perfectly consistent to vote one way in a Council and to vote another way at a Public Meeting—was fatal to the influence of the "Ex-Librarian," and it will require a lengthened period of penitential mourning to absolve him from the penalty he has brought upon himself through his vacillating conduct. Nor will he gain much in the opinion of honest men by his new literary connection.

The College has been viewed as attacked by a well-disciplined but illegitimate opposition, and by ungrateful sons it has brought into public professional existence, who have

not hesitated to employ their knowledge of its affairs in the endeavour to cause disruption. The opposition to the College has always been ungenerous, but lately it has become reckless.

Disappointed in their failures, some of the oppositionists have descended to anonymous personal abuse, and the illegal promulgation of direct falsehood; nevertheless, the College continues on its steady course, and being now freed from the internal elements of dissension, let it be trusted that it will continue such a course, without fear of dissolution from the effects of unworthy combinations, or slanderous missiles.

If it be asked—What is the secret of success by which the College has been enabled to overcome every attack upon it? The answer is plain:—*The College is constitutionally established.* Thus, it has taken root, and in due time it will fill the land, so far as the dental profession is concerned.

Once more the Members of the Council are unanimous, and *honestly* so. Once more the Members generally support them; and well may those who regard the progress of the College with alarm, because their names do not appear in connection therewith, exclaim — THE COLLEGE OF DENTISTS IS TAKING ROOT—WHERE ARE THE PROTESTORS?

LECTURES AT THE COLLEGE OF DENTISTS.

On Tuesday, November 9, a Course of Twelve Lectures on the Medical History and Treatment of Diseases of the Teeth, was commenced at the College of Dentists, Cavendish Square, by Dr. Richardson, the eminent author of the Astley Cooper Prize Essay, on the Causes of the Coagulation of the Blood. The course embraces the consideration of important practical subjects in connection with dental surgery, which have never been discussed before, and the lectures will,

without doubt, form a most valuable addition to the stock of professional information.

We understand they will be published entire. The annexed notices of the first five lectures are taken from the *Lancet*.

COLLEGE OF DENTISTS OF ENGLAND.

On Tuesday evening, Dr. Richardson delivered the *Introductory Lecture* to his course of lectures on the "Medical History of Diseases of the Teeth." Having pointed out the benefits which would accrue to science generally, were the opinions and knowledge of the medical and dental professions more correctly blended, the lecturer proceeded to the scientific part of his subject, by defining what should be understood by the terms "local disease" and "constitutional disease," and the relationship which these terms hold to each other, with great clearness. Dr. Richardson showed that the division of diseases into two varieties was arbitrary, and that the term constitutional origin was an absurd one, unless correctly interpreted. He (Dr. Richardson) would speak of local diseases as of *systemic* origin; and would consider it better still to say that such diseases were derived *through* the system than that they originated in the system. This led to a very simple account of the origin of diseases generally, in which the lecturer showed that all diseases were derived from external causes. After dividing the external causes of diseases into three classes—the physical (accidents), the chemical (poisons), and causes which act by simple interference with the physiological functions (modes of life)—the lecturer gave a description of the poisons, organic and inorganic, which affect the teeth through the medium of the body. The poisons of mercury, syphilis, of the eruptive fevers, and the poisons of malaria, were then discussed. Thence he passed to diseases of constitutional origin, arising from perversion of physiological functions, and grouping these into diathesis—as the strumous diathesis, the gouty, the rheumatic—he traced out the connections which obtain between these dispositions, and the various local disorders of the dental structures, and concluded his lecture by summing up ten short propositions, the comprehensive review which had been offered in the body of the discourse.

On Tuesday evening, Dr. Richardson delivered his *Second Lecture* on "The Medical History and Treatment of Diseases of the Teeth." The attendance of members was excellent. The subject of the lecture

on this occasion was "The Hæmorragic Diathesis in its bearings on Dental Practice." After defining the term "hæmorragic diathesis," Dr. Richardson proceeded to show that this diathesis must not be accepted as indicating a disease in itself, but as being a symptom based on certain diseases, such as scurvy, purpura, and anæmia. He then gave an account of the constituent parts of the blood, centralizing his teaching in this part to the fibrinous constituent, as that constituent upon which the tendency to effusion of blood rested. The fibrine might be deficient in quantity, it might be in imperfect solution, it might be too freely dissolved in alkaline serum. Under each and all of these conditions, the hæmorrhagic diathesis might be said to be present. From the blood, the lecturer passed to the circulating machinery, and in describing the organs in which the circulation of the blood takes place, he seized the opportunity of explaining the three kinds of hæmorrhage—venous, capillary, and arterial. Basing the after part of his lecture on the physiological proportions which had thus been adduced, Dr. Richardson passed in review the diseases which ordinarily give rise to the hæmorrhagic tendency, describing their symptoms, pathology, and cause, together with the accidents which may occur in dental operations during the existence of the diathesis. Thence he discussed the question of hæmorrhage during dental operations, and especially after tooth extraction, in which the diathesis, was *not* present. Adducing some striking illustrations of this class of cases, Dr. Richardson showed, that as the diathesis in such instances was not marked, as the blood possessed firm coagulating power, the cause of the hæmorrhage must be in the artery divided by the extraction; and indicated the probability that the loss of blood was due to a circumferential attachment of the vessel at its divided point with the surrounding structure, so that contraction of the vessel was prevented.

The concluding section of the lecture was devoted to the consideration of treatment; first, of the treatment of the hæmorrhagic diathesis by general remedies; and, secondly, of the treatment of active hæmorrhage after extraction. In meeting this last-named accident, Dr. Richardson recommended that general as well as local measures should be applied; the general consisting in the administration of the mineral acids, or acetate of lead, as in hæmoptysis; the local, in the application of three remedial measures—a good styptic (nitric acid being the best), a good plug (the extracted tooth being the best), and

firm pressure on the plug (for the production of which, Dr. Reid's simple and effective instrument is the best).

The lecture, of which we have been able to give but the most limited sketch, was listened to with great interest and attention.

On Tuesday evening, Dr. Richardson delivered his *Third Lecture* on "The Medical History and Treatment of Diseases of the Teeth." The attendance was even larger than on the last occasion. The subject of the lecture was "Neuralgia in relation to Toothach and Diseases of the Teeth." The lecturer commenced by describing the meaning of pain as a modification of sensation, and the relation which sensation holds to the brain, nerve, and blood. He then traced out the ways by which that exaltation of sensibility of nerve known as neuralgia might be induced, and gave a history of the symptoms of a neuralgic attack, with the modifications which sometimes occur, and the mode and cause of the cessation of the paroxysm. Next, the pathological bearings of the disorder were briefly discussed, and then the causes. The causes the lecturer divided into four parts (classifying in these divisions the varieties of the malady), viz. General, Central, Local and Reflex. Under the head general causes, there were included those forms of neuralgia which result from poisons, as malaria, and from poisons of diathesis, as the gouty diathesis. Under the second head, were considered those forms of neuralgia which result from mischief in some centre of the cerebro-spinal system, or from injury involving the trunk of a nerve between the affected part and the brain. In the third division, neuralgia, as dependent on a local irritation, was dwelt on; special reference being made to that form of the disease which results from deep-seated lesion of the teeth. The diagnosis in such cases was very carefully laid down. If it be found, argued Dr. Richardson, in any case that the neuralgia is confined to one side; if there be no distinct intermittence; if pressure on the nerve trunk relieve the paroxysm; if sedatives locally applied relieve the paroxysm, or if slight variations of heat or cold to the face *induce* the paroxysm, the evidence is pretty clear that the cause is local, and that a tooth is the local cause. In the last division, the lecturer described that class of cases in which neuralgia, and neuralgic toothach arise from disorder at a remote part, as from disorder of the stomach. The diagnostic points were here also carefully defined. Dr. Richardson concluded by explaining the

special treatment adapted to each variety of neuralgia; bestowing most pains in the elucidation of those cases where the question of the propriety of tooth-extraction is brought forward, and condemning with great force the system of resorting, in any form of neuralgia, to violent depressive measures, pain being an indication in itself of depression, and of all depressants the one that is most effective.

Dr. Richardson's *Fourth Lecture* delivered at the College on the evening of the 30th ultimo, was on "Hysteria and Allied Conditions, in reference to some forms of Dental Affections"—a subject of very great practical interest, but one offering much difficulty to the lecturer. These difficulties were met on this occasion by a carefully-studied mode of arrangement in the subject-matter of the lecture; the result being, that each new point, as it arose, had a basis on something which had preceded it, so that the mind was carried along in the course of what to many was a novel train, with an attention which, from first to last, was unbroken. The first points considered related to the nature of hysteria and its causes. Two facts were here impressed—that all the hysterical phenomena are developed *through* the nervous centres, but that the nervous centres themselves are not the prime seat of the disorder, there being, during the period when these centres are so easily subjected to modification of function, a preceding and originating cause in the general system, due to a depraved nutrition. The symptoms of the hysterical disorder were then described, and it was brought out in the end, that all the extraneous phenomena being removed, the elementary symptoms were but two in number—exalted sensibility, or pain, and exalted irritability of muscle—involuntary motion. The results of hysteria in its influence on the muscular system were now briefly explained, and the difference in the terms convulsion and spasm was defined. In illustration of the hysteric spasm, a case of hysterical trismus was sketched out. Next, pain as a symptom of hysteria came under notice, and the various hysterical pains, and the diagnostic marks of such pains, were recounted. This led to a description of the hysteric pain as simulating tic douloureux and toothach, the toothach of pregnancy being classed under the latter head.

Having considered with much minuteness the diagnosis of the hysterical toothach, Dr. Richardson changed the subject slightly, to consider the effects of certain diseased conditions of the teeth in

exciting the hysterical paroxysm in persons in whom the hysterical diathesis is strongly marked. He gave illustrations of hysteria assuming the epileptiform type in the instances of children during the time of the second dentition, and in young women during the cutting of the wisdom teeth. He showed also the influence of carious teeth in the production of the hysterical paroxysm, and the similar influence, in some cases, of the pivot of an artificial tooth and the compressing amalgam stopping. Referring, finally, to the points of practice to be followed in the various affections which had been discussed, the lecturer confined himself mainly to such details as came within the legitimate range of the dental practitioner. Thus the treatment of hysterical trismus was brought under notice, and of hysterical neuralgia, and of hysterical toothach. In all these affections, it should be borne steadily in mind, that the proximate cause of the local phenomena is central, that sedative treatment is best, and that any severely painful local measures during the time of the hysterical diathesis cannot relieve, but can, and do increase the mischief. In conclusion, Dr. Richardson observed, that if in this lecture he had introduced matters, which, as systematized facts and facts to be taught, were new, he made no apology, for the facts were in nature, and were to be learned in the study of nature—the more reason, therefore, that they should be both learned and taught.

Dr. Richardson delivered his *Fifth Lecture* on Tuesday evening, the subject being—"Dyspepsia, Rheumatism, and Gout, in relation to some abnormal States of the Teeth and neighbouring Organs." A definition of the three diseases above-named, and of the diatheses on which they depend, was first sketched out, together with an outline of the physiological pathology of these disorders. In this section of the lecture, Dr. Richardson took the view held by Hunter, and recently advocated by Dr. Garrod—that the two diseases, gout and rheumatism, are essentially different, and form no kind of union or admixture at the same time. In speaking of dyspepsia and diseases of the teeth, it was shown that three relationships commonly existed—viz., odontalgia from dyspepsia, by reflex action; odontalgia of carious teeth, from the action of vitiated saliva upon them; and production of caries by dyspepsia, first by the arrest of nutrition during the first dentition, and secondly, by the action of abnormal salival secretion upon the enamel.

In reference to this last-named point, viz.—the changes which the saliva may undergo, and the effects of disordered saliva; the lecturer expressed and very clearly showed how much remained for investigation. The following were as yet the only *facts*:—that in some instances of prolonged dyspepsia the saliva may have a persistent acid reaction, and that an acid solution has a decomposing power over the enamel. Coupling these two facts, the relation of acid secretion to caries might be allowed, in some cases, to stand in the light of cause and effect. But the hobby must not be ridden too far, and must *not* be assumed, as some have too hastily assumed, that caries is in all cases, or in most cases, dependent on this chemical cause. The researches of Dr. Westcott and of Mr. Thomson, of Camberwell, on the effects of acid solution on teeth, were carefully related, and their value explained.

Rheumatism, in regard to dental diseases, was described as affecting the muscles of the jaw and the maxillary articulation, in acute forms of the disorder; as affecting the periosteum connecting the tooth with the alveolus; and, lastly, as affecting the neurilemma of nerves, rheumatic neuralgia.

Gout was described as giving rise to a specific form of toothach. Into this description the lecturer entered minutely, giving illustrations to show that a severe and peculiar toothach is often the first indication of acute gout in persons in whom the gouty diathesis is present, and that it is very incorrect practice to connect gout as a disease with no other symptom than the swollen great toe.

The last part of the lecture was taken up with the consideration of treatment; and in this part many interesting subjects were brought forward, especially in regard to the dietetic management of infantile dyspepsia, and the treatment of that form of dyspeptic toothach which is dependent on acid secretions. In these latter instances, Dr. Richardson advocated the treatment first advocated by Mr. Gaskoin, and supported by Dr. Rigby—of using the alkalies as remedies, both locally and medicinally.

The attendance of Members was well sustained.

COLLEGE OF DENTISTS.

MONTHLY MEETING, Tuesday, October 5, 1858.

The President in the Chair.

Mr. Miller, Glasgow, was elected a Member of the College.

Mr. Harrington read the following paper on Aluminium :—

Gentlemen :—It was in 1808, now just half a century ago, since that celebrated chemist, Sir Humphery Davy, discovered Aluminium to be the basis of the earth, Alumina—common clay. But he could only obtain the metal in minute particles as dust, instead of a solid metallic substance, and for forty-six years it was looked upon as a curious, rather than a useful metal ; but in 1854, a French chemist, M. St. Claire Deville, discovered a means of producing it in a solid metallic form, since which several improvements have been made in the mode of obtaining it, so that it has now become a common-place mercantile commodity.

It will be remembered by those persons who visited the London Polytechnic Institution in 1855, that a small bar of Aluminium was presented to that institution by the Emperor of the French, and that Mr. Pepper, in lecturing upon it, dilated upon its peculiar adaptation for artificial teeth, owing to its extreme metallic lightness, it being only one-seventh the weight of gold, and also from its capability to resist the action of acids, and its non-liability to oxidation. Since then, several dentists have tried to use it in the same way as gold, but failed, because no suitable solder has been discovered that will connect pieces of it together, and it has been abandoned by the profession in consequence.

In common with many others, I entertained a very high opinion of the properties of aluminium as a basis for artificial teeth, but from its scarcity, and being under an impression that some of our London practitioners would lose no time in testing its applicability for dental purposes, I did not commence experimentalizing upon it till last October, just twelve months ago. I then sent to Messrs. Johnson & Matthew, and procured a small quantity, and having heard of the soldering difficulty, a plan suggested itself to my mind, by means of which, I

thought it might be cast in any form, size, or thickness, that could be required for the mouth. I tried the experiment, and succeeded in producing a wearable piece, the first time.

Having ascertained by experiment, that muriatic acid dissolved it, but that neither nitric or sulphuric acids, nor melted sulphur affected it in the least, I determined upon trying it myself, and by actual wear, test its capability of resisting the action of the saliva and acids of the mouth upon it. I did so, first with a piece without teeth, and finding it stood, I then made a piece with two teeth, which I am still wearing, and have continued to wear night and day since the middle of last December.

After wearing the piece four months, and finding it underwent no apparent change, and that it was perfectly free from all taste or unpleasantness of any kind, I obtained provisional protection for my plan, and supplied the new metal to several of my patients.

I will now communicate the results:—In all cases where it can be supplied without springs, that is, as partial pieces or suction plates, it stands well; there is no taste or unpleasantness of any kind from it, and it does not appear to decompose or to be otherwise affected by the action of the saliva of the mouth upon it, in fact, to my mind, in this respect, it leaves nothing to be desired. But in cases where side springs are necessary, the gold springs and spring work must be insulated, or a galvanic action takes place between the two metals—a strong saline taste is produced, and the decomposition of the aluminium is the result. It is also necessary to be careful not to use any "wrought" aluminium either as wire for rivets or any other purpose; for if we do, the wrought metal is rapidly decomposed, leaving the cast metal unaffected. This is a fact I was not at all prepared for, and it has surprised every one with whom I have conversed on the subject; but it is, nevertheless a fact, and must be borne in mind, and guarded against, in using aluminium for dental purposes.

Perhaps the greatest point in favour of aluminium is its extreme metallic lightness, it being only one-seventh the weight of gold and platina, and one-fourth the weight of silver. In scientific language, platina is 19.50, gold 19.26, silver 10.47, white aluminium is only 2.60. But as an actual test by the sense of feeling will produce a better impression on the mind than words can convey, I have three masses of metal, one gold, the other silver, and the third aluminium, which my audience will please to pass from one to another, so that each may have the opportunity of correctly estimating the remarkable

and astonishing lightness of the new metal. I may further observe, that if a coin were struck off in aluminium, the same size as a silver crown, or five shilling piece, it would not weigh so heavy as a sovereign. Now as lightness is a matter of great importance in the estimation of a patient, particularly in deep absorption cases, the advantages of the extreme metallic lightness of aluminium for dental purposes, must be strikingly evident, without any further enlarging upon it; and it is one that I find to be very telling in the estimation of the public.

The point next to lightness which I find to deeply impress the public mind in favour of aluminium, is the purity and harmlessness of its nature. It is obtained from the earth alumina, which is the principal ingredient in all clay; indeed alumina consists entirely of aluminium, combined with oxygen, which is one of the constituent parts of water; therefore, if the metal should undergo a trifling amount of oxidation while in the mouth, it can only produce an infinitesimal amount of clay, which is perfectly harmless to the system, and very different from the poisonous oxide of copper, with which even the gold now used for dental purposes is alloyed; therefore, with regard to its wholesome character, the public mind can be perfectly satisfied by the best of all possible evidence, namely, chemical demonstration.

Respecting the durability of aluminium, I shall now state some facts which have been proved, leaving you to draw your own conclusions. In the first place, nitric acid, which acts rapidly and energetically on most other metals, does not appear to affect it, neither does sulphuric acid, and it has no affinity either for mercury or sulphur; indeed, melted sulphur, which acts so rapidly and powerfully on silver, does not produce the slightest change on the surface of aluminium. These severe chemical tests go very far in its favour, but actual wear in the mouth is the most satisfactory proof; and in order to convince you on this head, here is a piece I have worn constantly, night and day, for ten months; and, as far as I can judge, it is as good now as it was the first day I put it into my mouth. Some of my professional brethren have expressed an opinion, that it will be too durable; but this is a point which time alone can decide; however, I think there can be but little doubt it will last sufficiently long to please the profession.

I use flat mineral teeth with aluminium; and the improvements I have introduced in them consist, first, in inserting one pin or blade

of platina in the mineral while the tooth is being made, instead of two or more pieces, which has always hitherto been done ; second, in forming the base of the tooth, so as to be supported by the aluminium. Here are some of the teeth for your inspection, made according to the new plan. Of course, when the teeth are short, that is, without gum, and front teeth, the blade will be sufficient, and the base-supporting principle will not be necessary ; but when the teeth are long, it will be a great support, as it will receive the whole of the force brought on their points, leaving the platina blade only to sustain such pressure as may act to force the teeth outwards. And in masticating back teeth, it will be of great importance, because the metal base will receive and sustain the force brought on the crown of the tooth during mastication. The following illustrations will give a more clear idea of the nature of these improvements :—fig. 1, is a side view of a tooth made on the old plan. Figs. 2 and 3, are side views of teeth made on the new plan.

fig. 1. fig. 2. fig. 3.

The first of the improved teeth is intended for cases where the upper part terminates with gum ; the second for cases where the upper part terminates in metal. In the first, the metal fits into the notch formed in the mineral, between the blade and base of the tooth, and supports it. The extreme base of the mineral gum of the second tooth, fits into a notch formed in the aluminium to receive it ; so that, in either case, the base-supporting principle is ensured.

In working the new metal, a model of the mouth is first obtained with equal parts of sand and plaster of paris, mixed with water, being poured into the mould taken from the mouth. When the model is set hard and dried, a pattern for the intended bed, or palate, is formed on it of bees'-wax, and the teeth properly fitted and adjusted, are attached in their proper places to the pattern, which is then finished off as nicely as possible to the size and shape required. The teeth are then removed from the wax pattern, and hollow cones of wax are attached to it in suitable places, to form patterns for holes to receive the melted metal, and allow the air to escape, the model (with the

wax pattern attached) is then put into an iron box, or vessel, open at the top, and so held, that the base of the cones of wax are on a level with the rim of the iron box. Equal parts (by measure) of plaster of paris and sand are mixed with water, and poured into the iron box, so as to embed the model, and the whole of the wax pattern, except the base of the wax cones; when set, the whole is put into a fire, and heated red hot, to melt and burn out the wax; and while red hot, the melted aluminium is poured into the space previously occupied by the wax pattern. When cold, the plaster and sand are removed, and a bed, or palate of cast aluminium is taken therefrom, ready to receive the teeth—mortice holes, ready to receive the blades made in the teeth, are cast in the piece—the teeth are riveted in their proper places, the piece finished off, and it is ready for use. Pieces thus made possess several advantages; all sharp-cutting edges can be avoided, and where alterations may be found necessary, the dentist has a solid substance to cut away, instead of a thin gold plate; crevices, or interstices to receive extraneous matter, can be avoided, and cleanliness ensured. An accurate fit will be obtained, because the liquid melted metal conforms itself most accurately to every part of the model; and although a trifling amount of contraction takes place, it is easily remedied by a very simple plan, which, with many other matters of detail, will be fully explained to each person who may become interested in the invention.

Here are a few specimens for your inspection; and I have several pieces in actual wear among my patients, all of which have fully borne out what I have stated to you respecting the properties of the metal. The only serious difficulty I have met with, is in consequence of a galvanic action taking place when aluminium pieces are connected with gold side springs; this difficulty I have successfully overcome, by insulating the two metals, which may be done by putting bone blocks, and attaching the gold-spring work to them, and thereby breaking the connection between the two metals. I have also done it with mineral blocks, and with mineral teeth, but in this latter case, it is necessary that a piece of mineral, made with two holes in it, to receive the spring work, should be cast in the aluminium frame. I have also formed a skeleton block in cast aluminium, and filled it in with tortoiseshell, which answers very nicely as an insulator, to receive the spring work, and is very durable; and I have no doubt many improvements will be made on my plans of insulation, and mode of working altogether. Hitherto, the ingenuity of one person

only has been brought to bear in the matter, whereas I hope it will soon occupy the attention of numbers, when the advantages of aluminium for dental purposes, and the mode of using the same, will be fully developed.

Much more may be said on the subject, but as I expect a discussion to follow my remarks, and many new and interesting facts be elicited, I will not now intrude further on your time with observations on the metal, but proceed at once to explain the terms on which I have decided on offering the advantages of the invention to the profession.

I have been advised by my friends, professional and otherwise, to offer licenses to any members of the College of Dentists, or Odontological Society, or to such persons as are qualified to become members to use my invention at ten guineas per annum, and in case of partnership firms, ten guineas for the first, and five guineas for each additional member in the same firm. Therefore, at an outlay of ten guineas, every competent member of our profession will have an opportunity of testing the advantages of aluminium in his practice, without any further liability or expense, unless he finds it to his interest to renew the licence at the year's end. The only condition I shall impose on each licensee is, that he shall confine the use of the invention to his own private practice, and not under any circumstances employ it for any member of the profession, in short, that he shall honestly and faithfully use the privilege.

I shall be happy to meet the licensees in London at stated periods, to give practical instructions, and furnish all such information as may be necessary ; and full printed instructions, sufficient to enable any skilful practitioner to use the invention, will be supplied to each licensee.

The advantages of lightness, purity, and perfect harmlessness, of aluminium, together with the cleanliness, comfort, firmness, &c. afforded by the invention, will be a sufficient inducement to ensure public patronage without tempting them with cheapness, and as the mode of working differs from that you are now accustomed to, I would recommend each licensee to commence by charging the same for alluminium pieces as he now does for gold. With experience and practice time will gradually be saved, and when proficiency is arrived at, those who feel so disposed may give the public the advantages thereof; but I would recommend them not to begin by holding out cheapness as an inducement.

I am now prepared to issue licenses upon the terms already stated, and shall be happy to receive the names of any gentlemen who may be pleased to favour me; or they may be obtained by application to my residence—Ednam House, Ryde, Isle of Wight.

Gentlemen, I thank you most sincerely for your polite attention. I shall now be happy to listen to such remarks and observations as you may wish to offer, and will do my best to reply to the same.

DISCUSSION.

The President inquired whether aluminium could be flattened the same as any other metal; and, also, at what temperature its fusion took place.

Mr. Harrington replied, that it could be flattened exactly the same as gold, silver, or other metals that dentists were in the habit of using. The temperature at which it melted was lower than gold or silver.

The President asked if it did not oxidize when in a state of fusion.

Mr. Harrington replied that it did; but it was easily prevented: the method would be imparted to any person taking a license to work the new metal.

The President inquired what was the cause of wrought aluminium decomposing in the mouth, while the cast metal was free from that objection.

Mr. Harrington could not assign any reason for it, but could merely state the fact.

Mr. Turner inquired, whether the metallic surfaces used as molar teeth stood well; and he would like to know how they could be repaired, as the metal did not admit of soldering.

Mr. Harrington said, that at present, he had not had any cases requiring repair, nor had he had much time to turn his mind to that part of the business. Repairs could, however, be effected by using mineral teeth.

Mr. W. Perkins inquired whether wire could be used at all, without being liable to decomposition in the mouth.

Mr. Harrington said that it could not be used in any case.

Mr. Humby inquired if the metal, when of considerable thickness, would give way if pinched between the finger and thumb.

Mr. Harrington said it would not.

Mr. Humby had found it do so.

Mr. Harrington suggested that the casting must have been unsound.

Mr. W. Perkins inquired if the application of the hammer, or roller, would produce the decomposible quality spoken of by Mr. Harrington.

Mr. Harrington said that it would; the use of the file, even, would produce a decomposible surface.

Mr. R. Thomson asked how tube teeth were to be used.

Mr. Harrington had not used any.

Mr. R. Thomson observed, that Mr. Harrington had spoken of repairs being effected by means of mineral teeth; and that was why he made the inquiry.

Mr. W. Perkins asked whether drilling would produce an oxidizable surface.

Mr. Harrington replied that it would, but for a short time only.

The President inquired whether Mr. Harrington had found different effects produced by the saliva of different persons.

Mr. Harrington had not observed any.

Mr. R. Thomson asked whether galvanic action was not produced with other metals.

Mr. Harrington said it was, until the part became covered with oxide, when the galvanic action ceased.

Mr. Spencer inquired whether a cast of aluminium plate would bear bending; in the case of a clasp, for instance, being too wide.

Mr. Harrington said it would to a small extent; if, however, due care was taken in the arrangement previous to casting, it wanted little or no alteration.

Mr. H. Perkins, observing the thickness of the backs of the teeth in the specimens produced, wished to know what could be done in cases of close bites, where such thickness was inadmissible.

Mr. Harrington said, that there were cases, no doubt, in which aluminium could not be used; at the same time, he believed there was much improvement in the working of the metal yet to be made.

Mr. Bell wished to know how it would answer with respect to stopped teeth.

Mr. Harrington explained that no galvanic action would be produced, unless the metal was in contact with the stoppings.

Mr. Williams asked if it could be electro-plated.

Mr. Harrington believed it could, but had not tried it.

Mr. Turner wished to know how long a time was required to make a set.

Mr. Harrington could not well answer that question, as the process was a new one; although he had made many sets, he had not observed the time sufficiently to give a satisfactory answer.

Mr. Harrington having shewn a very ingenious blow-pipe, to be used in his new process, explaining the method of its application—

The President said—Well, gentlemen, it appears that diligence will, like faith, remove mountains; and we are certainly very much indebted to Mr. Harrington for the diligence he has bestowed upon the subject he has introduced to your notice this evening, as well as for the able and lucid manner in which he has brought it forward and explained it to us. He has done much to remove the difficulty of working this new metal; nevertheless, I believe that very much remains to be done. The specimens which he has introduced are certainly very beautiful; but still, I cannot help clinging to the use of gold: it does so nicely for our patients, and so well for ourselves, and is, altogether, so satisfactory, that I should be very sorry to relinquish its use in our profession. Mr. Harrington, however, merits our best thanks; and I know that you will all agree with me when I thank him in our joint names, as I now do, most cordially. (*Cheers*). I cannot help, at the same time, expressing to him the pleasure that I feel in thanking him, as I do personally, for the very kind manner in which he has made us acquainted with the fruit of his labour, as well as for the readiness and kindly feeling he has displayed in replying to the various questions submitted to him by the gentlemen present.

A vote of thanks to Mr. Harrington, carried unanimously, terminated the proceedings, and the meeting separated.

ELECTRICITY IN DENTAL OPERATIONS.

A Meeting of the Members of the Dental Profession, and of scientific gentlemen taking an interest in the application of Electricity to Dental Operations, was held on Tuesday, October the 12th, at the College of Dentists, Cavendish Square. The principal object of the Meeting was to discuss the value of Electricity as an Anæsthetic, with the view of testing its merits in Dental Operations.

The Chair was taken by Peter Matthews, Esq., President of the

College ; the Lecture-room was densely crowded, and the most lively interest was taken in the proceedings.

Mr. Matthews introduced the subject, as follows :—

Gentlemen :—There has appeared of late, in the periodicals of the day, so much relating to electricity as an anæsthetic agent in dental operations, that the Council of this College has been called upon by many Practitioners to constitute a Board to examine and report thereon to the general body. The Council, however, considered, before taking that step, it would be better to give a general invite to every practitioner, whether in medical science or not, to pay this College and its Members a visit, and so cull from each other's stores such mental food and experience, to be, as it were, a lamp to our path, and a guide in our future manipulations.

We are now assembled for such purpose ; but previously to entering upon the subject of electricity, I think we should give a cursory glance at those known agents producing anæsthesia, which we have been in the habit of using, as circumstances required. The first, Sir Humphery Davy recommended, was "nitrous oxide," more familiarly known as the laughing gas ; but in the many cases in which I administered it, I found it more a hindrance than a help ; my patients either laughing immoderately, or pugnacious, or possessing extraordinary desires. One foreign gentleman to whom I gave it, grasped the mouth-piece so tightly that it was with difficulty I could remove it, he crying out most lustily—"More champagne ! more champagne !" You may be assured I soon abandoned the use of so stimulating a gas. The next agent I used, was ether—a mixture of sulphuric and hydrochloric ; but it requires more in quantity than chloroform to produce anæsthesia. Yet, on the whole, I think the former to be safer than the latter ; the same untoward effects are not due to it.

Chloroform is now generally used—a cheaper article than ether, and more speedy in its effects ; but it has been, in many instances, fatal to life. Now, the question naturally arises—Shall so great a boon be dispensed with in operations, because of fatality in a few instances ? Certainly not. How many hundreds have been relieved by chloroform ? How has suffering humanity lifted up its voice in praise of the ethereal compound ! The patient on the operating-table, about to undergo a severe operation—the matron in parturition, alike inspire the soothing draught ; awakening as from a dream of nectared sweets, to be informed that their troubles are ended. Even Royalty

itself disdains not the draught drawn from Lethe's crystal stream. Its peculiar action is on the voluntary muscles, the involuntary pursuing their steady course: still, caution must be on our right hand in confiding to so fickle a friend. It is difficult to account for the failures. It should always be given with a due admixture of atmospheric air; and I never administer it if my patient dreads its effects.

Drunkenness is a state of anæsthesia, and many an operation has been performed in that state, the patient not having had the slightest idea of anything that had happened. I had a gentleman who never failed, when he wanted a tooth out, to visit me in a state of intoxication, His words were—"That it was the only comfortable way to have a tooth out;" and he always recommended his friends the adoption of it. Whether they followed his example and dictation or not, I cannot say. His was the only visit of that nature and of such extent.

We now come to the purport of our assembling together this evening—to speak of electricity, and its value as an anæsthetic in dental operations.

Electricity was little known to the ancients. It is only within the present century that its phenomena, and the extensive relations of this property or force, have been successfully investigated'; and even at the present day, says a learned writer, though a vast number of facts have been investigated, the subject is still shrouded in much mystery. In reference to animal life, I may remark, that the relations which exist between the electric force and the nervous influence are of the most intimate, but at the same time of the most subtle character. The shock of the torpedo was known to the ancients. Electricity excited by the contact of two metals, producing muscular contraction, was discovered by Galvani in 1789; and Baron Humboldt further advanced the science by his examination and description of the gymnotus electricus in 1811. The subject has been pursued by Professor Matteucci in a series of Memoirs communicated to the Royal Society, and published in the "Philosophical Transactions for the year 1845, 1846, 1847, and 1850." In his fourth memoir, published in 1846, his object is to prove that the electric current transmitted along a nerve, modifies the excitability of the nerve, in a manner differing widely, according to the direction of the current. Thus, the direct current rapidly exhausts this excitability, while the inverse current increases it. He ascertained, that if an animal is etherised, and the direct current is passed along one sciatic nerve, and

the inverse along the other, contraction of the muscles takes place with the direct current, only on interrupting the current, while, with the inverse current, contraction appears only on closing it. But these are the phenomena with the anterior roots of the nerves, or nerves of sensation only; if these be cut, the effects are instantly reversed, contraction with the direct current takes place on closing, and that with the inverse on opening or interrupting the circuit. These experiments are sufficient to make it evident that the effects produced by the application of an electrical current to the living body, are of an intricate and refined nature, and that we are extremely ignorant with regard to their details. Electricity has again and again been brought forward as a remedial agent, and has again and again been laid aside, in consequence of its frequent failures, and partly from our not knowing how to apply it, and how to apportion the degree of intensity to the nature of the case; for, it will be observed, that electricity, like heat and light, acts beneficially, or otherwise, simply in proportion to its degree or quantity. A certain temperature, a certain amount of light, and a certain condition of electricity, preserve life and health—how, we know not; while other degrees or quantities of these all-pervading properties or affections of matter may instantly destroy both, as by a sun stroke or a flash of lightning.

We are indebted to Faraday for the fact that magnetism, like electricity, is a universal property of matter. The connection between electricity and magnetism is known to be of the most intimate nature, as is seen in the new sciences, electro-magnetism, and magneto-electricity.

About the year 1834, I, with a few friends, tried the effect of electricity in various ways, as a remedial agent, for the cure of many complaints; among them were some of aneurism (not diffused), which Mr. J. Phillips, of the Westminster Hospital, proposed to cure by the galvanic current. It produces coagulation of the blood; but whether any of those cases on which we operated were ultimately cured by those means, I am not now in a position to inform you. My other trials were with the teeth; and you see before you the very machine I then used; and I candidly confess to you, that my experiments not being satisfactory, I abandoned the use of it. Probably, I was too careless in my manipulations, and expected too much from a pet idea; certain it was, I laid it on the shelf until a friend of mine took compassion on it, and gave it a home of usefulness and industry. To his kindness I am indebted for the loan of it this evening. I

have lately resumed my experiments in consequence of the astounding relations I have read, not only from our transatlantic brethren, but from others of our own locality; and though I have operated on very many persons, I cannot at present faithfully and honestly say, it is an anæsthetic. To be that, the operation should be perfectly painless, as it would be under the influence of chloroform; such state I have not yet found. Some have said it was not disagreeable, whilst others have stated the contrary. Some have said they experienced a sensation, others that it was a mere trifle. Certain it is, that the mind greatly influences the amount of pain in tooth-drawing. Great fear operates largely on the nervous system, in decreasing its amount, and many a tooth has been extracted, under such circumstances, without the patient being cognizant of the fact.

Animal magnetism, or mesmerism, is stated to be another harmless mode of operating; the patient can, I understand, be thrown into a state of complete anæsthesia. Tooth-drawing, amputations, excision of tumours, have been performed, whilst the patient was totally unconscious, and the body not showing the slightest symptom of pain. Great and grand must this power be, if it could be called generally into existence and influence; and though I have never had the opportunity of judging by individual inspection, and so proving the truth of these statements by eye-witnessing the effects, yet I am bound to believe the honesty of those who, by position, are worthy of credit, and who have been my informants in this matter.

You see before you, gentlemen, various machines for generating and applying the electric fluid. This (referring to a large electrical machine) is the old electrical apparatus; but, in addition to this, we have other forms of machines; we have too, various powers; we have north and south poles—quantity and intensity—positive and negative —and other terms; and all these things have to be taken into your consideration, if you wish to operate faithfully and successfully. Now in the extraction of teeth, it is not quantity that is required, but intensity; you do not want a series of batteries, one small battery only will be sufficient to produce intensity of electricity by induction. In this large electrical machine the glass is the positive, and the rubber the negative pole, the electricity is produced by bringing the two surfaces into contact—this is electricity by friction. (The action of the machine was shown by the speaker). We have next electricity produced by the decomposition of metals. There is in this apparatus one very small pair of plates, and these acting by

induction, will produce any quantity of electricity you may desire for dental purposes. (The apparatus was put into action, and the plan explained by which a greater or less degree of intensity could be obtained as desired). It will be necessary for you to bear in mind, in the course of your operations, that you must wear a silk glove, otherwise the electricity will pass through your body to the patient. The glove, being of silk, is a non-conductor, and the electricity will not therefore pass through it, but will flow along the wire attached to the forceps. Electricity will act upon some people in a different manner to others, and if you want to obtain perfect success in all cases, you must modify the intensity of the fluid according to the temperament of your patients. For a warm temperament a smaller degree of intensity will be required than for persons of colder temperament. The next machine is for producing magneto-electricity. It is the invention of an American, and by this we get electricity by the magnet, a current being generated by turning an armature ; the same effects are produced as by the electro-magnet just referred to. In using this machine, however, two persons are required to be present, in the room with the patient, while with the electro-magnet, there is no necessity for the presence of a third person. Then we have Mr. Waite's system : it was shown at the Great Exhibition of 1851 ; but what I object to in this, is the very large number of cells which it contains. By it you produce a great deal of heat, which is not wanted—it is intensity you require, not quantity, for when that exists, there is an amount of heat which is truly painful. The terms anode and cathode have been used by Professor Faraday, instead of the terms " positive" and " negative," the one to denote where the electricity enters, the other where it goes out.

Mr. Matthews concluded his very able and interesting address as follows :—

And now, gentlemen, in conclusion, let us look for a moment at the mighty acts generally of this subtle fluid, under the command of man. He conveys his will through a single wire, like the instantaneity of lightning over miles of space. He connects the great Continents together by a coil buried in the vast waters, which in less time than we have spent here this evening, has conveyed a message and brought its answer. What will be the next achievement ? Nothing seems impossible, when the arts of peace and the hand of science are truly guided by the Giver of all good gifts ; and when the Bounteous Dispenser deigns to enlighten the humble-minded recipient : in fine,

electricity stretches from pole to pole, it circumscribes the earth, it supports our existence, and when death enters our tenement of clay, there is little doubt that, during its decomposition, the electricity it contained will be given out to the circumambient atmosphere, to enter into new life, and to assist in giving vigour to other material elements. *(Loud cheers).*

In reply to the invitation addressed to the meeting by the Chairman—

Dr. Purland proceeded to give the results of his experience of the anæsthetic powers of electricity. He stated, that he had found the application of the electric current to tin-foil, placed outside the cheek, successful in removing some descriptions of neuralgic pain. He had also found, that soreness of the gums might be alleviated, if not entirely cured, by laying the charged wire along the affected part. In his practice, he had observed, that not one patient in ten would avail themselves of electricity.

The speaker then proceeded to give the following results of his experience respecting the application of electricity, and its powers as an anæsthetic.

CASES.

1. A gentleman about fifty-five. A right lower canine and an incisor, loose, very painful to the touch, and the patient exceedingly nervous.

It was some time before I could get him to sit down, but the comfortable assurance, that he would feel no pain, induced him to submit. It was a failure.

I had the machine, as you now see it. I had no foot-board, in fact, I had never seen one. I had no silk glove Of course the force was terrific, but I held fast hold of my man, and the teeth were mine. On asking him if he had felt the teeth come out, he said, with a shudder, he did not think he had; that, however scientific it might be, it was far from agreeable.

As soon as he was gone, I fabricated this foot-board, which, though rough and simple, answers very well.

2. A dens sapientiæ. The patient, a young lady of twenty-two. I corrected my error with regard to the intensity, and was quite successful. The lady was delighted, and so was I.

3. Upper molar. Young lady. Failed, from the patient dropping the handle at the moment of extraction.

4. Lower molar. Man aged forty-five. Successful: the patient

declaring that he did not feel any pain, and that the application was rather pleasant than otherwise.

5. Young lady, aged twenty-six. Successful. In this case the patient required a more powerful current than the male aged forty-five.

6. Large lower wisdom-tooth. Male, aged fifty. This was quite successful.

7.—8. The same may be said of Nos. seven and eight. Both females.

9. This I removed with a curved elevator, in consequence of its being so much decayed on one side. Before extracting it, I covered the tooth with tinfoil attached to the wire, gave it a dose of electricity for half-a-minute, and instantly removed it with comparatively little pain.

10. Patient, aged seventy-five. Tooth loose, and therefore, successful.

11. Man, aged thirty. Broke it first purchase; a second removed it. This man said it was nothing to what he had felt at my hands on previous occasions.

12. Man, thirty-four. Quite successful.

13. Female. Felt slight pain.

14. Gentleman, aged forty. Heavy fangs. This patient was very shaky, in consequence of the great pain and trouble he had always experienced from the firmness of his teeth.

He said he felt "the snap," as he called it, but he could not say it was pain.

15. Gentleman, aged thirty-three. Two canines, upper and lower. The patient had no intention of having the teeth removed, and they were so very tender, he could scarcely bear them touched. They were removed without pain, and I subsequently received this letter from him :—

"Cliff Brewery, Ipswich, 27th Sept. 1858.

"My Dear Sir,—Having had two of my teeth extracted by you, with the aid of the electric current, on the 24th instant, I wish to record my impression.

"You are aware the gums of both my upper and lower jaw were in a painfully inflammed state, making me very nervous. As soon as you had fixed your instrument on my tooth, thereby completing the electric current, all apprehension ceased, and when the tooth was

extracted, not only did I feel *no pain*, but I assure you, the sensation was rather pleasureable than otherwise.

" This process is really a great boon, as it absolutely relieves, or, I may say, annuls, one of the most acute of human pains.

" Believe me, my dear Sir, very sincerely yours,

" To T. Purland, Esq., Ph. D. HENRY BOWLER."

16. Female. Quite successful.

17. Removed with the elevator, after use of tin-foil, as No. 9.

18. Lower sapientiæ, like No. 6. Very firm. The patient said he felt it come out, " but as to pain, it was not worth talking about."

19. Young man. No pain.

20. Was taken from a patient in a most debilitated and dying state; he was much afraid of the operation, but never moved in the least, and smiled when it was over.

21. Was a little patient, who had given me an infinite deal of trouble on previous occasions, but with the machine he would have had a dozen extracted.

22, 23, 24. All successful.

25. A failure, from the stopping of the machine.

26, 27, 28, 29. One woman, and three children. All successful.

30, 31. Stumps of sapientiæ, right and left. Removed in the same way as Nos. 17 and 9, by applying the tin-foil for half-a-minute, and then removing them with the elevator.

Mr. Lobb next addressed the meeting.—He said, that though not a dentist, and having no experience in that profession, he wished to address the meeting on some scientific points connected with this very interesting question; whether electricity or galvanism was or was not an anæsthetic. He thought it was a very important one, not only to dentists, but to the world at large. Now galvanism when produced, was in an interrupted current. The small coil patterns that he saw before him were not anæsthetic. There was produced by them a to-and-fro current, a direct and a reverse one, and it could not, therefore, be anæsthetic; because, if the direct current produced anæsthesia, the reverse would not, and *vice versa*. The coils now exibited would not, therefore, he contended, produce anæsthesia; but that they would produce an effect which might be useful to dentistry, he had no doubt, and principally because the effect would be to remove the mind of the patient from the operation he was about to endure, and thus enable

the operator to remove the teeth more readily. (*Hear, hear.*) Now the next question was, whether there was any form of galvanism that might be considered as anæsthetic. He thought most decidedly that such was the case. Some of the first philosophers of the Continent had told them so. M. Du Borroment had clearly stated, that galvanism was an anæsthetic; and one author has gone so far as to recommend its use in cases of tetanus. There were two kinds of electricity as applied to physiology, the direct and the inverse currents. We had the direct current passing from the centre to the periphery, and the inverse passing from the periphery to the centre. In the one case, if the skin were touched, the nerves would feel the sensation; but in using galvanism the contrary current must also be applied. The direct current of electricity was stimulant, the reverse was anæsthetic and depressing. (*Hear, hear*). The simplest operation of electricity was to apply a piece of zinc and a piece of copper joined together by a wire to the skin. If brought into contact with a healthy skin, the zinc will produce an ulcer. If applied to a sore, they had the direct current passing from the zinc through the flesh to the sore, and they found that it would heal up quickly. (*Hear, hear.*) If they passed a current in the opposite direction, contrary effects would be produced. Then came the question, could they produce anæsthesia by means of the electric fluid? He had produced anæsthesia upon his own little finger to a small degree by electricity, passing the inverse current from the upper to the lower part; but in treating neuralgia, the inverse current had a wonderful effect, and he had known cases of neuralgia which had been weeks and months troubling patients, cured in a few seconds. (*Hear, hear*). But this was not producing anæsthesia upon a healthy nerve. With respect to the usual operations of dentistry, he was very doubtful whether true anæsthesia could be produced by electricity; but if any gentleman would place some teeth at his disposal, (*A laugh*), he should be most happy to try some experiments. With respect to the interrupted current, he had no hesitation in saying, that it was not anæsthetic, it was a stimulant, and would produce, as he had already said, some effects which might be useful in dentistry. Anæsthetic effects ought not to be looked for in the currents produced, by batteries, such as those of Smee's, with numerous cells—they produce such an amount of heat as would seem to shrivel or burn up the nerve, and produce, in fact, a cauterization of the part affected; while electricity produced from one cell, would only pass the skin. Such an arrangement as that of Pulvermacher's chain would be more efficient

than a large battery of cells. These produced only a small amount of heat, but great intensity. With one of these chains of sixty links, sufficient intensity could be obtained for drawing any tooth—with one of one hundred and twenty links, the intensity would be much too great. With one of these chains he had been enabled to produce such an amount of anæsthesia in his finger, as to enable him to pass a needle through the flesh, to the depth of one sixteenth of an inch without feeling pain. (*Hear, hear*). In conclusion, he expressed a desire to afford every assistance in his power, in throwing light upon the interesting question they were met to discuss. (*Hear, hear*).

Mr. Perkins said he was sorry, from the little experience he had had, not to be able to express any favourable opinion upon the use of electricity as an anæsthetic. His experience proved that some patients objected to the use of electricity, because they did not understand the thing, and feared that it might do harm. He had removed objections on this ground, by stating that if it did not do good, it certainly could do no harm. He recollected to have heard a female declare after the removal of a perfectly sound tooth, that she had felt no pain whatever in its extraction. The contraction of the muscles of her face at the time however rather belied her statement. (*A laugh*). Upon more closely questioning her, she repeated her statement, that she had felt no pain. Other persons again have been so composed, that they really did not know much about it; but in the case of some very fast teeth, he had seen a decided amount of pain shown by screaming, and could not, therefore, give a very favourable account of the use of electricity. His own opinion was, that galvanism was not an anæsthetic at all. (*Hear, hear*). It produced in fact a confusion of ideas on the part of the patient. Teeth-extracting was, he believed, accompanied with a great deal of pain, the galvanic current inflicted pain, not the pain of teeth drawing; but of something else, and a confusion in the mind of the patient was caused by these two different kinds of pain, which prevented him from giving any very clear account of its effects. In the course of his experience, he had known four or five cases in which he had extracted fast teeth, and the patients had said that they felt no pain during the extraction in the usual way with the forceps. If persons could be found to declare that they felt no pain under the ordinary application of the forceps, he could not think that the experience of the persons operated upon under the galvanic current should have too much weight attached to them. It appeared to him that a confusion of ideas was created,

a sort of fright was associated with the pain of extraction, and when quickly done, the patient really did not know whether he felt pain or not. (*A laugh*). He was convinced in his own mind that galvanism was not an anæsthetic. (*Hear, hear*).

Mr. Weiss considered it of very great importance that they should endeavour to perform operations when accompanied with galvanism, as correctly as possible. It had been generally remarked that a silk glove was a sufficient insulator; now that might be the case in performing one operation only; but as in operations with electricity they were more anxious than usually, and that created a degree of moisture in the hands, the glove would not be under such circumstances so perfect an insulator as could be desired. If a silk glove be kept in one hand for a time, it would soon be found that it was not a perfect insulator. He had performed about fifty cases, but the result had failed to convince him that galvanism was anæsthetic. Once he had occasion to remove two teeth from the mouth of a patient; in the first instance the operation was perfectly successful; no delay took place, he proceeded to the second tooth and in that case found it a failure. The cause of the failure, however, arose from the patient having broken the connection. It might, no doubt, be accounted for by the fact of the novelty in the first operation, while in the second the novelty of the application had ceased. As the application of electricity did not possess any novelty, he did not think it was worthy of the attention of the profession. (*Hear, hear*).

Dr. Elliotson then proposed that " the Council of the College of Dentists be requested to appoint a Committee to investigate the value of electricity in dental surgery, and to report thereon to the Council."

Mr. Thomson seconded the motion, which was carried unanimously.

Mr. Matthews said, allow me in the name of the College of Dentists to thank the visitors for their attendance upon this occasion. The Members of the College greet them all well, and I am pleased that the subject of this night's discussion has been so interesting. I am particularly obliged to Mr. Lobb, for his very able and lucid explanation on the subject of his experiments in galvanism. The facts to which he alluded are of great moment. I introduced some reference myself in my opening remarks to the question of interrupted currents, and so impressed me with the fact that the inverse current is so very different from the direct, and the direct from the reverse,

and each produced different effects, that I thought it would be the duty of every one of us to endeavour to make this subject one for our special study. As Mr. Lobb said that he should be very happy to give us every information in his power, if we will give him some subjects to operate upon, I shall be very proud to give him the means of operating at my little hospital, and I have no doubt that other members of the profession will gladly avail themselves of the superior knowledge of that gentleman, in order to enable them to perform the operations so as to produce anæsthesia. It will no doubt be a great desideratum if we can accomplish this, and I trust that we shall pursue the subject most earnestly. It will require many hours taken from professional duties to attain this object, and I therefore appeal to the younger portion of our profession; they may assist us greatly by devoting their leisure time to the study of this interesting branch of science, and giving us the results of their experience in the form of short papers at some of our monthly meetings. *(Hear, hear).* Youth is the time for learning and study; when we become old, the brain gets impaired, as it must naturally do with all of us—indeed it is a wonder that it should last so long as it does. But I do wish to impress upon the younger members of the profession how important it is that they should assist us in the matter, and I trust that this little warning voice I give this evening, will be taken kindly from one who has had the experience of many years. *(Applause).*

Mr. Donovan. I trust the Meeting will permit me to make use of a very old brain *(a laugh)*, in order to propose the best thanks of this Meeting to the Chairman for the very able and courteous manner in which he has conducted the business of the evening. *(Applause).*

Mr. ———— seconded the motion, which was unanimously adopted.

Mr. Matthews briefly acknowledged the vote of thanks, and stated that so long as health and strength permitted, he should devote his energies to the promotion of the success of the College of Dentists, and while supported so admirably as he had hitherto been, he should not want a stimulus for future exertions.

MONTHLY MEETING, Tuesday, November 2.

The President in the Chair.

Mr. Humby exhibited and explained an improvement upon his bellows blow-pipe, upon the principle of Mr. Jordan's mouth blow-pipe, but with a different arrangement of the lever, by which the slide for regulating the flame is more easily managed when being used. Also an invention of steel wheels for fitting natural teeth in bone, &c.

Mr. R. Thomson then read the following paper, on striking up gold plates :—

Mr. President and Gentlemen.—In appearing here this evening, for the purpose of introducing an improved method of striking up gold plates, by which the operation is much facilitated, and greater accuracy in fit is attained than can be done by the ordinary methods usually employed in practical dentistry, it would have given me greater pleasure in doing so, if there was more encouragement given to those who introduce improvements that are of practical utility. But, by past experience, I have found that many Members of the Profession have shown a strong disposition to depreciate the merit of inventions, however valuable, without testing them, or even ascertaining their properties. Recently, however, there appears to be a more liberal feeling evinced by some, through which, and by the very polite invitation of our President, I have been induced to come forward on the present occasion. It is greatly to be regretted, that there is so much jealousy, prejudice, and disunion, among dentists generally in this country, because such retards progress, and gives men of other nations, who come to practice amongst us, superior advantages. If I were called upon to compliment our Transatlantic professional brethren, I would be disposed to give them more praise for the manner in which they extol and support each other, than for all the superiority, as practical dentists, they are said to possess. I believe that it will be acknowledged, by every unprejudiced observer, that within the last quarter of a century, in Great Britain, there has been as rapid progress made, as many improvements perfected, and as great efficiency acquired in dentistry, as in any other country, or in any other line of art or science. A sense of the importance of the art of dentistry, and the spirit of emulation, have stimulated the energies of many for attaining proficiency in every branch of the

profession, by which it has been raised to a very high standard of excellence. But this, like all other professions, has its inefficient members, and also its empirics; still I think they are fewer in comparison to the number of dentists than is often supposed. I believe there is as much talent and genius, combined with integrity, among them, as is to be found in any other body of equal numbers; many good members of the profession, of superior abilities, have hitherto been but little known, beyond their own immediate friends and patrons. If there were greater unanimity of feeling in the profession, and more liberal encouragement given, by the acknowledgement of the merit of original ideas when communicated, nobler triumphs would yet be achieved.

On the present occasion, it is no part of my purpose to enter upon practical dentistry generally, nor the different methods of supplying artificial teeth; and as the materials employed in dentistry have already been treated upon in this College, and their properties being so fully known to the Members, I shall make no remarks upon them, further than that gold and mineral are the only two substances that appear to give general satisfaction, at least this is the case among my patients, some of whom will not admit of having bone, for either upper or lower pieces. For complete sets some few approve of gold uppers, with bone lowers; but they are only such parties as have been in the habit of wearing that class. In consequence of the high price of good hippopotamus bone, and its substance being so subject to decomposition, particularly when worn in some mouths, gold ought to be used in all cases where it is practicable. This opinion has been already very ably advanced here, but the views of the author of the paper to which I allude were not generally supported, bone having yet a great many advocates. I am, however, of the opinion, that bone for some mouths is scarcely worth working, and if used at all, it ought to be for temporary sets, and for very aged people; or in some cases in lowers, where there is very great depth required.

Gutta percha has been introduced in dental practice for lining gold plates, and other purposes; but to employ this substance in supplying new pieces, I consider is altogether unnecessary, because gold can be fitted to almost every case that may present itself. Within the last few months I had a case of an aged lady who had had two sets made, in which the plates were lined with gutta percha; but she could not wear either of them with comfort, in consequence

of which she requested me to make a set for her with gold plates only; and I experienced no difficulty in giving perfect satisfaction. Gutta percha is very useful for making up deficiencies in fit, after pieces have been worn, and the gums having undergone a change; but it is only in such cases that this substance need be used.

In manipulating gold plates, I have heard many very excellent practical dentists speak of the difficulty they have often experienced in fitting very accurately, without any rock or spring of the plate upon the model; and this having been experienced by myself, as by others, led me, from time to time, to devise certain methods to overcome this, which I have succeeded in doing; and by introducing them to the profession, my object is for the advancement of dental science, without any idea of deriving any profit or pecuniary advantage from the members of it. Everything that I have previously introduced to the profession has not only been gratuitous, but at a considerable loss to myself; therefore, if I can show that those plans which I had last perfected can be of valuable service to the profession if adopted, I am entitled to some approbation, and the acknowledgement of such merit as they possess. But approbation, even if obtained, is only an empty sound—a temporary qualification without reality or emolument, and this being often denied when justly merited, causes many to consider, that he is the wisest man who turns all his schemes to his own advantage. Previous to introducing this machine to the Odontological Society in June last, many of my private friends strongly advised me to secure it by a patent. This I could have done, as I have made certain arrangements by which it has been made particularly useful for the purposes intended, which have never before been introduced. But I preferred pursuing the liberal course, and leaving it open to be adopted by any one who might be disposed to do so. In the British Journal of Dental Science for June 1858, in noticing this machine, it is reported that Mr. Cartwright, jun. said, that "he had seen a machine of the same kind twenty years ago in Mr. Nasmyth's work-room. The merit due to Mr. Thomson was for the various appliances to it (for the adjustment of the models), in which alone there was any novelty." I was not aware, till then, that anything of the kind had ever been previously used in dentistry; but a machine of this kind, to be used for this purpose without these appliances, which are acknowledged to be mine, would, in practice, be next to valueless. This you will have an opportunity of judging in the after part of the lecture.

In the process of striking up gold plates, it will be unnecessary to go through the whole *minutiæ;* I shall, therefore, merely mention that which will be necessary for the illustration of the practical application of this machine. The general system now usually practised, is to use zinc models, and counter ones of lead; zinc is preferred, from being the hardest metal that fuses at a low temperature, and lead, for the matrix or counter model, is most suitable when there are any straggling teeth upon the zinc model; but for plain models, tin, of a mixture of lead and tin, may be used: but whatever metal is used, it is usually fused in an ordinary iron ladle, with round bottom, and when fluid, the zinc model is sunk into it to the required depth; and in striking up the plate between them, the matrix is held in the left hand, supported upon the knees, and the zinc model is struck with a hammer or some other implement, according to the practice of the operator. The size, weight, and form of the implements used in different establishments vary; but all those I have seen are too light, and often the form is objectionable. I have seen some mechanics use hammers not larger than this one, which is only two pounds five ounces in weight, and I have seen a hammer of this size and shape used; it is three pounds nine ounces in weight, but the form is unsuitable for this purpose, being too tall and narrow, so that, in applying it, it would be apt to tilt; therefore, strokes made with it would generally be false, and produce but very indifferent results. This hammer is only an inch and a half thick, and ten inches high. I know of some establishments, in which they use a laundress' flat-iron, divested of its handle: this has a considerable advantage over the last kind of hammer, because it gives a more solid stroke and cannot tilt; but it is too light to produce readily the desired effect. I know of another establishment in which they use a shop weight without the top ring. The application of this, and the last implement, may be considered much alike, and, doubtless, many good fits have been produced by them. With regard to the hammers generally used, the average size is from four to five pounds in weight. I judge this by those I have seen at the dental depôts, and in the various establishments to which I have had access; and also this is as heavy as could be used for striking up plates upon the knees. When the gold is of a proper thickness, it requires considerable force to bring it into proper form, fitting into all the parts and indentations of the model, and to rest upon it without any spring. The lighter the implement employed to attain this, the more repeated strokes

must be given; and the more the gold is hammered, the harder it becomes, therefore, there is the greater difficulty in fitting accurately, and without any spring in the plate; but it will be said by some, that the gold can be annealed. This can be done; but by repeated hammering and annealing, the gold becomes brittle, so that when the piece is being worn it is apt to split or break. I have had pieces to repair through the plates having broken when the gold was of a proper standard in quality, but so hard, that in attempting to bend it, it would break like a piece of thin amalgamated zinc. This might have been occasioned by too much hammering, and too frequent annealing while making the plate. I am impressed with the opinion, that it is important to get up a plate with as few strokes as it can be done by; because, even after the plate is made, where mounting the teeth, it has so often to pass through the fire for soldering on the pins, plates for swivels, &c. This will often cause the plate to spring if the gold is injured by too much hammering in the making.

About eight or nine years since, I adopted the principle of using an anvil mounted on a thick block of oak, upon which I placed the model, instead of upon the knees, and I used a different class of hammer, short, thick and heavy. Not being able to procure one anywhere of the form and size I wanted, I made a pattern in wood, and had this one made to order. It is full seven pounds in weight—it is short, thick, and heavier at the bottom than the top, so that a very solid steady blow can be given by it. Here is the next hammer I adopted; it has no advantage over the last in form, but it is four pounds heavier, and by experience I have invariably found, that the more weighty and solid the hammer I used, the better effect I could produce. When I first adopted the anvil, I found that the round bottomed matrix was unsuitable, I therefore turned in wood a pattern for a flat-bottomed ladle, and had some cast in iron, in which I fused the lead, and by sinking the zinc model in it, I at once obtained a steady matrix, or counter model for the top of the anvil, and produced very satisfactory results; but even then I did not consider I had accomplished all that was desired, because, in using a hammer, there is a certain circular action by the swing in applying it, from which consideration for years past I have thought of several methods that might be adopted to obviate this. Here is an implement that can be used with advantage, and attended with but little expence; it is of cast iron, made upon the principle of the pavior's mullet; but short and thick, twenty-one pounds in weight; with it, a very solid and almost perpendicular

blow can be given; but as no man, however practised, can manually strike a blow twice alike, (and in most kinds of work done by hammers, it is not necessary that it should be so) but for the purpose in question, I am of opinion that this is most essential, from which consideration I have adopted this machine, which is upon the principle of the guillotine; the principle of itself is not new, as it has long been used in this country as a pile driver, and for other purposes, and the French have employed it for ages as an efficient instrument of death, and many noble heads have been struck off by it; but the purpose to which I apply it, is more humane, being to give additional comfort to those who require to have part of that grand structure artificial. The head contains the "Dome of thought and palace of the soul;" the face is the index to it, and the mouth is the part which most readily engages the attention, and the teeth are considered to be its finest ornaments. As these organs are frequently prematurely lost, it is our office to replace them artificially. Then the greater perfection to which this beautiful and scientific art can be brought, the more highly will our services be appreciated. From this consideration, ever since I first entered the profession, I have had my mind and energies directed towards the advancement of dental science, and making improvements in all its branches. All the improvements I have made, any legitimate member of the profession who may be desirous of adopting any of them, can have every facility for doing so.

Before giving the order to have this machine made, I had to consider how to get the models perfectly adjusted, because, in using the machine, if the models stood uneven there could be no advantage gained by its application. The adjustment of the models I obtain by the following contrivances:—Here is an iron ring, which fits to the rim next to the face of the hammer; this is fixed to it by a set screw; there are other three screws which point inwards, under the face of the hammer: with these screws I fix the zinc model, so that its upper surface meets the face or under surface of the hammer, so that they are perfectly true. The flat-bottomed ladle, full of fluid lead, is placed on the top of the pedestal or block, the hammer, with model attached to it, is let down slowly and sunk in the metal to the required depth, but as the metal takes some time to set, the hammer must be supported; if otherwise, the model would sink too deep. For this purpose I have a slide upon one of the upright rods, which I can fix at any required height by a set screw; with this I support the hammer while the metal is setting, after which, the ring that is

attached to the hammer for supporting the model is now removed, the model and matrix are, with the top of the block and face of the hammer, perfectly true. But, if worked in this manner, the top of the block being plain, the models would shift to one side or the other; this would occasion imperfect strokes: I have made a provision for this by having a plate, with an opening in it, just the size of the bottom of the ladle, this I fix upon the top of the block with two strong screws, this keeps the ladle in the centre, when the zinc model is being sunk, but after the matrix is taken out of the ladle, and when placed again within the plate on the block, there is a vacant space the thickness of the ladle; this would admit of the models shifting to a certain extent; to make up for the thickness of the ladle I have an iron ring, which I place within the opening in the plate, and then the matrix within the ring, this secures the models so that they cannot shift. Therefore, with these arrangements, and by the weight and solidity of the hammer, which slides up and down easily, but without oscillation, between the upright rods worked by the guide pulley at the top, while the necessary force can be regulated by the height to which the hammer is raised; consequently, the machine can be worked for the purposes intended with the greatest precision, and the most satisfactory results are thereby obtained.

In the course of his observations, Mr. Thomson exhibited models and hammers of various kinds, with other implements according to the text, and concluded by showing various experiments with his machine to prove its efficiency.

The annexed engraving represents the front elevation, upon a scale of three-fourths of an inch to the foot, the machine being seven feet high. Fig. 1—the pedestal or block, 2-feet high, of solid cast iron, weighs $3\frac{3}{4}$ cwt.—

Fig. 2 2—The two upright rods, 4-feet 2-inches in length, $1\frac{1}{4}$-inch square, of wrought iron.

Fig. 3.—The hammer, weighs $31\frac{1}{2}$ pounds.

Fig. 4.—The pulley, 9-inches diameter.

Fig. 5.—The cross-plate which supports the upright rods and carries the standards for the pulley.

Fig. 6.—The slide which supports the hammer when sinking the models.

Fig. 7.—The top of the block.

Fig. 8.—The same, with plate attached for keeping the models in position while being worked.

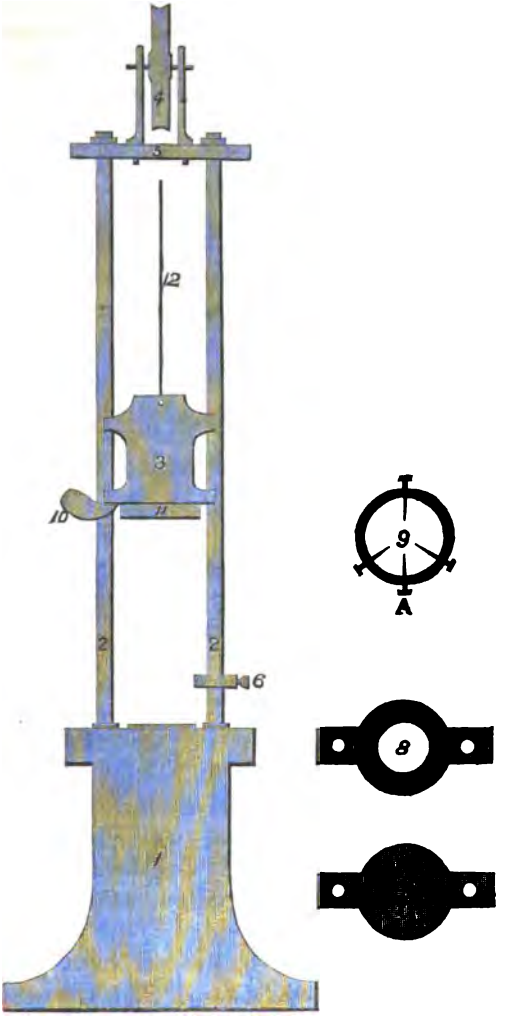


Fig. 9.—The ring which is attached to the rim or under border of the hammer for supporting the zinc model when sinking for obtaining the matrix.

Fig. 10.—The click which sustains the hammer when not in use. The outer part of the click is heavy, so that it drops when the hammer is raised, and leaves the rod free where the hammer acts.

Fig. 11.—The rim, or under border of the hammer, round which the ring is attached by the screw A when required for sinking model; B B B, three screws which point inward under the face of the hammer, for attaching the model previous to sinking.

Fig. 12.—Part of the rope by which the hammer is worked.

The other parts, such as the plate, which is fixed on the top of the pedestal or block, the flat bottomed ladle, and the models, will be understood by the text.

Mr. Thomson having replied to various questions put by different Members—upon the motion of Dr. Purland, seconded by Mr. Humby, a vote of thanks was unanimously accorded to him for his paper.

MONTHLY MEETING, DECEMBER 7, 1858.

The President in the Chair.

The following gentlemen were elected Members and Associates of the College :—

MEMBERS.

Mr. Butcher - - -	of Southport
Mr. Vidler - - -	of London

ASSOCIATES.

Mr. Sales - - -	of Sheffield
Mr. Cunningham - -	of London

The President then read a letter from Mr. G. Waite relative to a curious specimen of necrosed bone from the inferior maxilla of a patient, who had been under his care; describing the cause, progress and favourable termination of the disease, which had resulted from the removal of the specimen produced.

The President observed, that the Members ought to be particularly obliged to Mr. Waite, both for the specimen and communication relative thereto, the more so, as he had upon several occasions offered us the use of his instruments, and although he was not a Member of the College.

He had also to state, that Mr. Humby had presented a fine specimen of necrosed bone from the superior maxilla, but it being at present in the possession of Dr. Richardson, he was unable to exhibit it to the members.

A vote of thanks was then accorded to Mr. Waite.

Dr. Purland having read a list of additions to the library and museum, described an improved method of finishing amalgam stoppings with a camel's hair pencil, in lieu of a burnisher.

Mr. Cunningham presented a model of a contrivance for arresting hæmorrhage in the gums; he stated that he had made and used it in a case of hæmorrhage of the gums of a child, little more than two years old, and that it had answered the purpose admirably.

Dr. Purland made some observations on the subject, and stated that his method was to apply lint saturated with cold vinegar to the part as closely as possible, and had never found it fail; twenty minutes generally sufficed. He, however, thought, that in the case of so young a patient, Mr. Cunningham's invention was a very good one.

The President, in approving of the instrument, observed, that small inventions ought never to be despised, as from them great results frequently arose.

Mr. Jordan presented a model of a case of irregularity, which he explained. Also a model of a method for perfectly striking up lower plates, in cases where the teeth are in a very converging direction.

Mr. James Bate then read a paper on filling teeth, and the judgment required in selecting materials.

Mr. President and Gentlemen:—Having devoted much of my time and attention to filling, and the judgment required in selecting materials, I am induced this evening to make a few brief remarks on this subject, because, all important as it is, none of us have hitherto brought the matter under consideration, and we must all agree, that there is nothing connected with dentistry of greater moment, or more calculated to give us wider scope for the exercise of our skill, it being mere mechanism to replace teeth by false ones; but filling, considered in its highest acceptation, is the summit of our art, for thereby we *restore* a diseased organ to its former usefulness and strength; and experience has taught me, that, in almost every case, extraction, so much dreaded, may thereby be avoided; and false teeth, too, would not be so general, were the public at large made more alive to its paramount necessity. I shall not now take up your time in descanting on the very flagrant abuse of this most important and scientific operation by a certain class of plasterers whom nobody recognises, but who *make* more in reality for the legitimate dentist than a passing thought might imagine. First, then, let us consider what are the

preparations best adapted for our use, varieties of teeth requiring varieties in fillings? I will just enumerate a few most worthy of our notice, and in general use.—

Firstly, amalgams—secondly, tin foil—thirdly, gutta percha, and lastly, gold in its various forms. Of course there are other materials, such as lead, gum mastic, an alloy of bismuth, tin and lead, soft sulphur, with many others both metallic and non-metallic; but these being unimportant, I will not intrude on valuable time; therefore, I have only selected those in more general use, and *best* adapted for the operation, wishing to be practical in my remarks.

Now, let us endeavour to ascertain the advantages and disadvantages of each, and to what cases the peculiar properties of all may best be applied. First, then, cements, or amalgams, of which there are such manifold descriptions (all by courtesy the best) that there seems some little difficulty in identifying the real one, their plastic, soft nature recommending them for tender teeth, and their cheapness, alas! being no small desideratum with the charlatan, as likewise their easy manipulation.

1 part gold
3 „ silver
2 „ tin

Put gold and silver into the crucible, and when they are about to melt, add the tin; when melted pour them from the crucible, and melt a second time to thoroughly mix them, and then pour them into an ingot pot and reduce to fillings.

I think I have now said all that can be adduced in favour of cements—now let us see if we cannot find fault in an equal ratio. In the first place it is by no means permanent, frequently causing our skill to be questioned, for of course we cannot, in many cases, expect our patients to blame the acids, &c. of their own mouths, for the dispersion of the mercury, thereby causing the plug to become porous, and likewise diminished in size; oxidation taking place, not only on its surface, but entirely through, for when the mercury is removed by whatever means, there must be of necessity cells, or canals, left in its place, consequently these must be affected as well as the other parts: decay then supervenes around the edges, and under the plug, and the latter case is worse than the first. True, there are not a few happy exceptions, even after ten or fifteen years insertion, as I can testify, by one of my own teeth, which has been filled ever since 1846. But let me refer you to a very interesting paper in the second number

of the "Quarterly Journal of Dental Science," page 168, which enters more fully into the subject than present time will allow. The question now is, to what class of teeth are cements peculiarly adapted? Certainly not to the front, nor any that are exposed to heavy pressure; and I think I may also add, that the teeth of patients of delicate constitutions should likewise be exempt. The only justifiable cases then, in my opinion, are, much decayed and sensitive molars, where time, material, and remuneration, are desiderata. I must say I condemn their indiscriminate use. I generally wash the filling in sp. ammonia prior to its being placed in the tooth, as it thereby lessens the quantity of mercury, and removes some of its impurities; and when inserted by a process of percussion, I have found the filling remain longer intact. Have we not several cases on record, where amalgam fillings have caused ulceration of the tongue? One came under my own notice about three years since, where the removal of the obnoxious filling completely cured the disease. It was only the other day I read a short notice of two cases; one where the cavity being lined with gold a current of electricity was generated of sufficient power to cause an unpleasant sensation, on touching it with the tongue; and the other, disease of the antrum, apparently caused by two teeth filled with amalgam. The removal of the teeth cured the disease.

Having briefly touched on amalgams, I will now proceed to the second on my list, viz.—"tin foil." The following quotation from Harris so perfectly embodies my ideas, that I must give it you verbatim.—"Tin, when properly prepared, is less objectionable than most of the articles just enumerated. When well inserted into the cavity, it will *sometimes* effectually preserve the organ: but if the fluids of the mouth are very much vitiated, or should they at any time afterwards become so, it soon oxidizes, and turns black, and then, instead of *preventing*, it rather *promotes* a recurrence of the disease. As an excuse for its employment, however, many operators say, that in consequence of its greater malleability than gold, it can oftentimes be employed for filling a badly-shaped and large cavity, when the last named article *cannot* be used. I do not, however, regard this as a valid objection. Any tooth that can be filled with tin can be equally well filled with gold. Others, again, employ it because many of their patients are not able to pay for a more costly material. Now, if a tooth is worth filling at all, it is worth filling in a proper manner, and with a suitable material; and it would be by far more creditable to the operator to divide the expense with his poor patient, than to

use an article that may never benefit him." Now let me say a few words on one of the most useful preparations that has of late years been given to the profession—I refer to gutta-percha. Many attempts have been made to bring this into a suitable state for filling, but all have hitherto proved total failures, with one exception, and we may thank Mr. Jacobs, of Bridgewater, for his perseverance in bringing it to such perfection. Nor has he selfishly retained it exclusively for his own benefit by patent, but has generously given it to the profession. It combines two essential properties—lightness and adhesiveness; and if there are any present who have not yet given it a trial, I should recommend their doing so, for, for frail and tender teeth, nothing can be better; it is well adapted, too, to lateral cavities of incisors: of course, I need not say it is used in a warm state, but great care must be taken not to over heat it, as it then becomes fibrous and non-adhesive: much nicety must be observed in shaping the cavity for its reception, and it must be kept perfectly dry; it retains its colour—indeed, it seems to assimilate itself to that of the tooth. I have observed, that for the grinding surfaces of molars, it is not so well fitted; for mastication wears it down, and often causes it to be displaced; nor is it suited to shallow cavities. The way in which I prepare it, is this:—I have a small round silver plate attached to an ivory handle, in which I place a piece of gutta percha, according to the size of the cavity to be filled, and hold it over a spirit lamp, kneading it with an instrument; and those best adapted for its use are smooth, blunt-pointed pluggers, in fact, as Mr. Jacobs himself tells us—burnishers; and with these it is well worked into every part of the cavity, care being taken to finish off well at the edges. I had occasion to fill several teeth for a lady, and among them was a lateral incisor, decay running underneath the gum; the truant had already been filled two or three times with gold, but had always given a vast amount of annoyance, particularly irritating the gums, &c. I used this invaluable preparation, and up to this time (now nearly two years and a half), the greatest comfort has been experienced. This kind of gutta percha is likewise pre-eminently useful for temporary fillings, which, after a few months, can be easily removed, and the tooth permanently filled with gold. Not long ago, I used it thus for filling the crown cavity of a lower molar. I first made an attempt at filling permanently inserting a cap of ivory; but the next day I was compelled to remove the plug, on account of intense suffering. I substituted Jacob's gutta percha, and six months

after, the tooth bearing a sufficient amount of pressure, I had the satisfaction of replugging it with gold. I frequently cap the nerve with gutta percha; for it is an admirable non-conductor. For the last eight or nine years I have always used ivory, and, indeed, do still, sometimes, give it the preference. I am now quite aware this has been mentioned as originating with another, but was ignorant of the fact until a short time since, when I saw it noticed in a periodical; at all events it is a capital contrivance, and a good way of disposing of old worn out tablets, these being very easily cut into the necessary forms. And now I am arrived at the last, though by no means the least on my list; viz.—gold, the filling which should undoubtedly be used in every case where sufficient pressure can be employed for its retention. Its advantages are everything—disadvantages none, save that it requires a greater degree of skill to work it; and to the clumsy operator this certainly is a great drawback. The various preparations of gold, as we are all aware, are ordinary foil, crystal gold, and crystal gold foil. I shall say nothing on common foil—it is too well known. I may as well remark, that there is the greatest degree of difference in its manufacture, and, that, use it as you may, a solid plug cannot always be made of it; but crystal gold and crystal gold foil, embodying as they do all we require, cannot be sufficiently prized by those who understand their manipulation; and I think we may congratulate ourselves on having arrived at so great a state of perfection; but we are indebted to Watts, of America, for producing this kind—that of English manufacture is not (to be honest and impartial,) at all comparable; and I believe, from *my* experiments, their formulas are totally different: for the last three years I have made them my peculiar study, both in theory and practice, and the result of my experience emboldens me now to advise its extensive use.

I have already, in one or two places, descanted at some length on these preparations, and perhaps it may be irksome, and will increase the length of this paper too much to repeat what doubtless has already come under your notice; but I must say, I am confident, if you will give crystal gold an *impartial* trial, you will, with practice, make such a filling as I defy you to accomplish with any other extant.

I will now give you my opinion of the English, or as it is generally known, "Barling's;" it is too dense, exceedingly wasteful, requiring the greatest care in carrying it into the cavity; and should it once get *wet*, it is *totally unfit* for use; but after an immensity of

trouble, time, and some little expense in one's patience and temper, a good plug can be made of it; and I should have no hesitation in using it, if I could not get better; but in the American, all these drawbacks are perfectly obviated; although it must not be imagined (and too many fall into this error) that, from its plasticity, it is easy of manipulation; with this impression, novices dive thickly into its use, and, becoming disgusted, they never put the question to themselves—"*How have I failed?*"

It is no use attempting difficult cavities at first; those of easy access should be mastered primarily, then by degrees those which require still more ingenuity, and so on, even practising out of the head as well; and if you are not satisfied with your powers, it will be your own faults. Another provoking cause of failure is the want of proper instruments. All I have seen of English manufacture, are *unfit* for the work, being too clumsy; the points must be well serated and kept sharp. I will just briefly state what are the principal rules to be observed in filling with crystal gold. Having with great care formed your cavity, viz. undercut, or grove shaped it, if it be one of easy access, and you can keep it *perfectly dry*, use as large pieces of the gold as possible, condensing as you proceed, and add piece to piece, keeping the gold high in the centre; and if properly done, you will find your plug quite solid—then burnish, and it will stand any amount of wear and tear. Should your cavity be intricate, take my advice, and use the gold in smaller pieces, proceeding as before, and you will find you can build larger upon larger, and that all will become integrated into one solid piece. Too much care cannot be taken to keep it dry during the operation, for which purpose I use bibulous paper, although I have made and seen good fillings, that were perfectly inundated with saliva at the time of operating. No. 1 gold is most useful for small cavities, and frail teeth; No. 2 is *generally* useful; Nos. 3 and 4, being much denser, use for large cavities, finishing up with Nos. 1 and 2, and sometimes with crystal gold foil. Old half-condensed pieces may likewise be inserted in large cavities, as foundations, when the fresh gold will insinuate itself between them, and unite the whole into one impermeable mass, which I positively deny to be porous. But the following experiment, I am informed, was tried:—A plug of the gold being made in a tooth, each day some cobalt was placed on it, and then I believe wiped off; after a certain time the filling was removed, and the sides of the cavity were found to be discoloured, as well as the

bottom; now this was no proof of porosity in my opinion, but, very conclusive that the gold was not properly consolidated, the cobalt finding easy access between the walls and the plug, otherwise it would have been perceptible entirely through the gold itself, and had the same experiment been tried with ordinary foil, I should like to know whether the result would not have been similar? Where we hear of the gold discolouring, and "a kind of suffusion about it," I maintain that it has not been properly introduced. The way, then, to prevent this discolouration is as I before said, to keep the gold high in the centre (viz. convex), this form causing it to adhere closer to the walls of the cavity, whereas if it be introduced in the opposite way (viz. concave), it has the effect of drawing itself away from the walls, thereby causing foreign agents to be introduced between the filling and tooth—hence discolouration. Crystal gold is particularly adapted to large cavities, with frail walls, where, indeed, foil cannot be used on account of the mode of wedging, which would split the tooth; but I am convinced that the method of packing with crystal gold positively binds the frail walls together.

Some time since, I had a lower molar to fill; it was completely decayed, with the exception of its internal and eternal walls; perhaps many would say the forceps was the correct instrument, but where your patient will not submit, you must do your best. After thoroughly excavating the decay, and cutting well under to get a groove, I forced a piece of gold plate between this tooth and the second molar, which made a posterior wall to retain the filling until finished; I then commenced operations, beginning with the heavy numbers and finishing with the lighter. After I had got in as much as I could, I went over the whole surface with a fine-pointed instrument, and where I found I could pierce it, I added more gold, until I made it a perfectly solid plug. I then removed the gold plate and burnished, and this filling, I do not hesitate to affirm, is perfectly solid, and will remain so. Now, here is a tooth that would have been plastered up with amalgam at the best, which, perhaps, would soon have fallen out again, and the tooth eventually lost.

Watts, I must again tell you, has brought crystal gold to this perfection: he has gone on improving, from time to time, until I can pronounce his present gold no more like the first I used than "Barling's" now is. Let me, in dismissing crystal gold, sum up the chief causes of failure; not enough patience and perseverance, lack of good

instruments and bibulous paper, and attempting too difficult cavities at first.

Lastly, I must say a few words on crystal gold foil, which I have no hesitation in pronouncing the best that can be made, in which opinion I am borne out by many friends. It is used in the same way as ordinary foil, and with crystal gold pluggers. In conclusion, for I fear I must have been thought very prosaic, I will quote the words of an able writer—"It seems to me the height of folly for one man to undertake to make himself the standard of all human ability, and to urge his own negation as evidence against a living fact, to endeavour to do away, or to deny the existence of a positive or tangible truth by negative testimony; it is virtually saying—I do not succeed, therefore you do not; others do not succeed, consequently no one does. This kind of reasoning in no way affects anything but itself. It is simply a *confession of inability*, and there it stops. It is an array of what *has not been done* against what *has been done*. One perfect crystal gold stopping, by whomsoever constructed, establishes what has been done, and what can be done again." And now, gentlemen, do not pin your faith to my sleeve, but judge for yourselves. Remember, "practice makes perfect," patience and perseverance, good instruments, bibulous paper, and crystal gold together, form a combination that will save a vast number of teeth, hitherto condemned as being beyond the reach of our art.

The President said, that, previous to the discussion on Mr. Bate's paper taking place, he begged to announce that Dr. Richardson would deliver his Fifth Lecture on Tuesday, December 14. Also, that Dr. Arnott would read a paper on Congelation, at the ensuing January Monthly Meeting.

After making some observations respecting the right of Members to propose gentlemen as Members of the Council, he announced that the Annual Meeting would take place on the 27th of January next.

DISCUSSION.

Mr. Spencer observed, that the Members ought to feel indebted to Mr. Bate for his paper on the filling of teeth, it being a very important part of a dentist's practice: regarding amalgam stoppings becoming spongy or porous, and likely to fall out, he would state, that the method he adopted was, to use as small a quantity of mercury as

possible, pinching it as thoroughly dry as possible before using it, and he found that it always stood very well. Tender teeth could not always be made fit to receive metallic stoppings; he found, however, that by lining the cavity with gutta percha, previous to filling with amalgam, the tenderness was removed, and the stopping could be retained without inconvenience. Jacobs's stopping he had used only in a few cases, but had found it answer very well.

Mr. Humby stated, that in Sullivan's cement, he had invariably found metallic copper.

Mr. Bell could not agree with Mr. Bate, that an amalgam stopping would produce ulceration; he had never seen such a case, nor could he see how it was possible for a smooth surface to produce ulceration, or soreness, though a rough one might produce both.

Mr. Cunningham had never seen ulceration produced in the mouth by amalgam, nor had he found it interfere with a gold band.

The President stated, that he had found that an amalgam would always act on gold, if brought into contact with it.

Mr. Rymer said, that there did not appear to be a very great deal of difference of opinion among the Members regarding the subject under discussion. All admitted that gold was the best material for stopping, but it was also admitted that gold could not be used in every case; and that in many of those cases where gold could not be applied, amalgam, of a good kind, answered the purpose exceedingly well. His friend, Mr. Bate (he thought), could not say *much* against it, as he had stated that he had a stopping of that kind in his own mouth, which had been there upwards of ten years, which, he thought, was a very fair criterion of its applicability, as well as durability. It must therefore be admitted, that although gold was the best material, where it could be properly applied, amalgam formed an excellent stopping, where gold was altogether inapplicable.

Mr. Bate then briefly replied, stating, that he did not *entirely* object to amalgam stoppings, but he did object to their indiscriminate use in all cases. He was much obliged to the Members for the attention with which they had favoured him, and should be happy, on a future occasion, if required, to come before them again.

The President thought the Meeting could not separate without heartily thanking Mr. Bate for his very interesting paper; he lived a long way from town; he, the President, wished that Mr. Bate was nearer to us, when we should have the pleasure of his company much

more frequently. However, his coming so far to see us, proved that he thought of us, and wished us well; and he had no doubt, but that a vote of thanks to Mr. Bate would be unanimously carried.

A vote of thanks, carried *nem. con.* in favour of Mr. Bate, terminated the proceedings.

MISCELLANEOUS.

DENTAL MEMORANDA.

By T. Purland, Phil. Dr. M.D.—Giessen;—Surgeon-Dentist to the Mesmeric Infirmary.

Concluded from page 355, vol. II.

"Morning Post, 1774.

"To the Nobility and Gentry.

"At the King's Arms, exactly opposite Dean Street, in Oxford Street, near Soho Square, Mr. Patence will attend every day at his Surgery and Apartments, from the hours of Twelve till Three, and every morning at his house, Bolt Court, Fleet Street.

"PATENCE, Surgeon Dentist, acknowledged and confirmed the only real operator for the teeth in this Kingdom; and he challenges all mankind, either French or English, to excel, or even equal him in the following operations; and as proof of the same, can produce teeth which he has replaced of every dentist in London, and some of Scotland and France; and can refer to Nobility, Gentlemen of the Faculty, Royal Society, Universities, Bar, and Stage; and could fill this side of the paper with encomiums from some of the highest rank, and upwards of two thousand persons whom he has relieved, viz. for transplanting, or fastening and preserving the teeth, though ever so loose; in supplying the loss with those that never discolour, suitable to different constitutions (an art known only to himself); in joining broken teeth; in cutting off or covering old stumps without giving the least pain; in fixing others that preserve

the natural ones; in scorbutic, ulcerated, or disordered mouths; in recovering those that drop in apoplexies, convulsive or deadly fits, Mr. Patence having brought those to life that to all appearance were totally dead. He further hopes, that no Lady or Gentleman will trust their persons or mouths in the hands of those who pretend to come from the Lord knows where, who in a short time will leave them to lament during life the miseries occasioned by some that daily present themselves, by having applied to wretched and pretended operators.

"No Cure no Pay, and no Imposition.

"N.B. No operator need apply; for they shall not receive any information."

[Patence was a bold man, and would have done honour to the fraternity of advertising dentists of 1858. Patence also taught the Minuet, Country Rigadoon, Cotillions and Hornpipes, "on reasonable terms."]

"MORNING POST, APRIL 1774.

"FISHER, Dentist, from Mr. Landumicy's, Old Bond Street, begs leave to inform the Nobility and Gentry, &c. that he performs the various operations on the Teeth, in the most judicious and satisfactory manner, such as filling, scaling, stopping, &c. either at No. 80, Portland Street, Oxford Road, or at their respective houses.

"To be sold, an exceeding fine-toned HARPSICHORD, made by Shade and Burkett, above twenty years old, enquire as above."

The year 1781, gives an insight into the modest fees, of what must be considered a high-class Dentist, for it is assumed that only high-class practitioners write books; and in a book from the library of Mr. Hockley, the highly respected and efficient Hon. Corresponding Secretary of the College of Dentists of England, published by Paul Eurialius Jullien, Surgeon-Dentist of 47, Gerrard Street, Soho, Price One Shilling, is printed a list of—

"The Author's Charges for the Operations ordinarily employed in preventing or remedying the Diseases, Defects, and Deformities incident to the Teeth, Gums, Sockets, or Palate.

"As publicly to evince that his conduct, in this particular, is far

remote from that Censure, to which many of his Profession, by their exorbitant Demands have subjected themselves.

	£	s	d
Scaling the Teeth	0	10	6
Bleeding, Scarifying, or cutting the Gums	0	5	0
Filling or stopping up the Cavity of a Tooth with Lead	0	5	0
Ditto with Gold	0	7	6
Filing, or polishing a Tooth	0	2	6
Extracting a Tooth or Stump	0	2	6
Transplanting a living Tooth	5	5	0
Ditto a Dead Tooth	2	2	0
Engrafting the Crown or Body of a sound Human Tooth, on the Root of a decayed one	2	2	0
Constructing and fitting an Artificial Tooth, with silken Ligatures	0	10	6
Ditto with Gold wire Fastenings	0	15	6
Ditto with Gold Springs	1	5	6
Constructing and fitting an Upper or an under Row of Artificial Teeth without Fastenings	10	10	0
Ditto a complete Set of Artificial Teeth with Gold Springs	25	0	0
Fitting and fixing a Human Tooth (on the same Construction as an artificial one) with silken Ligatures	2	2	0
Ditto with Gold Wire Fastenings	2	7	0
Ditto with Gold Springs	3	3	0
Fitting and fixing an Upper or Under Row of Human Teeth on the same Principles, without Fastenings	31	10	0
A complete Set of Human Teeth with Gold Springs	73	10	0
Constructing and fitting an Artificial Palate	21	0	0

[Berdmore died 1785.—He accumulated £50,000. By his will he directed his body to be interred at Nottingham, the place of his birth, and that a marble tablet should bear this singular inscription.—

" Near this place lie the remains of Thomas Berdmore, who acquired an ample fortune by Tooth Drawing."]

In 1794—" A Mr. Lambe sells Spice Nuts, makes Artificial Teeth and Artificial Eyes; and extracts teeth and stumps to admiration."

In 1795 we hear of " Mineral Paste Teeth," the invention of an ingenious French Surgeon, subsequently a Dentist, M. Dubois D. Chemant.

Like all dental novelties, they were rude imitations of human teeth, the colour was unnatural, and the weight excessive; and moreover in price not " within the reach of all classes," as much as one hundred guineas having been demanded and paid for a set of M. De Chemant's Mineral Paste Teeth. Their weight, colour and rattle in the mouth caused their use to decline; and although several attempts were made to improve the texture and appearance, none were really successful, until Mr. Claudius Ash, of Broad St., Golden Sq. suddenly brought out Mineral Teeth that had a great resemblance to nature. He was quickly followed by Small and others, and we can now produce teeth equal in appearance to nature, and sufficiently light to be convenient."

Reader, we have arrived at 1800, and we close the 'Dental Memoranda' from a conviction that you have had enough of it, and not from any lack of material; we have passed over many advertisements " quaint and curious" but the space allotted and the patience of our readers forbid their insertion.

Much could be said of the dental quackery of the Eighteenth Century—more of the quackeries of the Nineteenth; but as ugly things and nauseous drugs are best out of sight, we pass over the foul blot as best we may, and take our leave.

Dental Hospital.—On the 1st of November, an institution under this title was opened in Soho Square. The hours for receiving patients is half-past eight to half-past nine every morning. We have heard nothing of the working of the charity, but one hour in the morning seems rather a short period for giving relief at a hospital. Great publicity is given to the institution, and the names of the dentists in connection with it are printed in large letters in the circulars sent to the affluent, soliciting contributions for the relief of the indigent.

DEATH OF DR. BRIGHT.

We regret to announce the demise of Dr. Richard Bright, the eminent Physician, by which the Medical Profession has lost one of its most illustrious members: his demise was preceded only by a very short illness. The lamented gentleman received patients and was out in his carriage five days previous, after which he complained of indisposition, and retired to his chamber, which he was destined never to leave again alive.

Richard Bright, M.D., was the third son of Mr. Richard Bright, of Ham Green, Somerset, and was born in Bristol, in September, 1789, so that he was in his 70th year. After the usual course of elementary education at a private school in his native city, and afterwards under a private tutor at Exeter, he matriculated in the autumn of 1808 at the University of Edinburgh. During his first year, he devoted his attention almost exclusively to the general lectures delivered at the University, amongst which were those on moral philosophy and political economy by Dugald Stewart—on natural philosophy, by Playfair—and the mathematical lectures of Leslie, in the higher class of which he that year successfully competed for the prize. In the following session he pursued studies more immediately connected with his profession, and besides attending the course of chemistry by Dr. Hope, the lectures on anatomy by Dr. Monro, and on the institutes of medicine by Dr. Duncan, he availed himself of the excellent anatomical course delivered out of the College by Dr. John Gordon. In 1810 he went, together with Dr. Holland, with Sir George S. Mackenzie to Iceland. On coming to London that year he took up his residence within the walls of Guy's Hospital. He remained in Guy's during two years; during that period, stimulated by the aspiring energy of Sir A. Cooper, he acquired a taste for pathological investigation. In 1812 he returned to Edinburgh to further pursue his medical studies; and in September the following year he graduated, having written his thesis, "De Erysipelate Contagioso." He next proceeded to Cambridge, and entered Peter House, but only remained there for two terms, and subsequently became pupil of Dr. Bateman, at the Dispensary, and applied himself closely to the practical part of his profession, and particularly directing himself to pathological inquiries. In 1814 he visited Holland and the chief cities of Germany, and arrived at Brussels about a fortnight after the battle of Waterloo, and found much matter of

professional interest. Dr. Bright, in December 1816, was admitted a licentiate of the Royal College of Physicians, and was shortly after elected assistant physician to the London Fever Hospital. In 1820 he confined his public duties entirely to Guy's Hospital, of which he had been elected assistant physician, and continued to discharge the duties of that office till 1824, when, on the retirement of Dr. Laird, he succeeded him as physician of that institution. For some sessions he lectured alone, and afterwards associated with him Dr. Addison. In 1832 he was made a fellow of the Royal College of Physicians, and the following year was appointed Gulstonian lecturer, and in 1836 chosen one of the four censors, the late Drs. Paris and Chambers, and Sir H. Holland being his colleagues. The late Dr. Bright had contributed largely to the advancement of medical science by his various works, far too numerous to be enumerated in this brief notice. His works on dropsical affections have a universal reputation, and have been translated into all the languages of Europe. He was greatly esteemed by the members of his profession. Dr. Bright was physician extraordinary to the Queen, was a Fellow of the Royal Society, and several other scientific institutions. He was twice married; first to Martha, youngest daughter of the late Dr. Babington; and, secondly, to Miss Follett, youngest daughter of Mr. Bryan Follett, of Topsham, near Exeter, and sister to the late Sir William Follett.

ROYAL SEA-BATHING HOSPITAL, MARGATE.

We have much pleasure in giving insertion to the following Report up to 1st November, 1858 (just issued), of this noble charity:—

The Rev. John Hodgson, Honorary Secretary of this Charity, called the Royal Sea-Bathing or National Hospital, for the reception *exclusively* of Poor Scrofulous Persons from London and elsewhere—situated at Margate, has the very great satisfaction of being able to present the following Report to those kind friends who have subscribed, or who intend to subscribe to his "Five Shillings" List or "Auxiliary Fund."

1. Under the promising aspect of financial resources, to be attributed chiefly to the interest taken by all classes of persons—the Nobility, the Lord Bishops, the Clergy, the Gentry, and the *children*

of their families—in Mr. Hodgson's "Five Shillings" List, the Directors caused two new wards to be built during the early part of the year 1858, capable of holding fifty beds for poor scrofulous children. They were opened in August last, and the Hospital now provides beds for 250 patients. A special fund of £3000 was raised for this.

2. In consequence of the increase of income through the success of this Auxiliary Fund, the Hospital, which opened on 1st May, was not closed on 31st October, as hitherto has been the practice. *It is to be kept open* until 31st December; and, if the "Five Shillings Fund" continues to increase as it has increased during the last three months, wards in the Hospital for the worst and most urgent cases will be kept *open* during *the whole year*. A sum of nearly Eight Hundred Pounds in small subscriptions, not exceeding Five Shillings, has been received by Mr. Hodgson since 1 January, 1858. Hopes are entertained that it will eventually reach £1,250 per annum.

3. This Hospital acts as an Hospital in aid of London and County Hospitals—Sea air and Sea bathing being essentially necessary to the cure and alleviation of Scrofulous Disease.

Number of Patients Admitted into the Hospital between 1st May and 1st November 1858—416.

Ages.	Males.	Females.	Total.
6 to 12	83	56	139
12 to 20	76	78	154
20 to 30	39	40	79
30 to 40	11	15	26
40 and above.....	9	9	18
	218	198	416

Died 10.—Left the Hospital previous to 1st November 289.

Number of Patients Remaining in the Hospital, on 1st Nov. 1858, for a lengthened term, 117.

Circumstances under which 289 Patients left the Hospital.

	Cured.	Very greatly benefited.	Benefited.	Unimproved	Total.
Men	3	53	9	4	69
Women.....	10	50	8	5	73
Boys	15	60	5	4	84
Girls	13	42	6	2	63
	41	205	28	15	289

In addition to the above In-Patients, about 200 "Out-Patients" from London and elsewhere, having taken lodgings at Margate, had the benefit of Baths, Medical Attendance, Medicines, &c. &c.

REVIEWS.

Archives of Medicine: a Record of Practical Observations, and Anatomical and Chemical Researches, connected with the Investigation and Treatment of Disease. Edited by LIONEL S. BEALE, M.B., F.R.S., &c. No. 3—November 1858. London: John Churchill, New Burlington Street.

The third number of *The Archives of Medicine* has reached us at so late a period, that we are compelled to compress our remarks upon the work within the briefest limits. Amongst the contents, we observe many essays of the greatest interest in a scientific point of view. To allude to any one in particular, would be invidious, as we do not find a communication directly bearing upon dental science in this number of Dr. Beale's journal, although to the educated dentist we are convinced almost every subject considered will be found to afford useful practical information.

Practical Hints upon the Administration of Galvanism for the Treatment of Disease. By HARRY W. LOBB, L.S.A., M.R.C.S.E., &c. London: Simpkin. Marshall, & Co., 1858.

In this pamphlet Mr. Lobb has succeeded in producing a succinct but valuable introduction to the whole subject of Galvanism, as applied to the treatment of Disease, which must prove of essential service to the student, as well as to the practitioner immediately engaged in its administration; although it would appear that it is more particularly for the guidance of the latter, that the author has penned the result of his observations.

The subject of the pamphlet is divided into three parts. The first treats of the apparatus necessary to produce the effects of Galvanism. The second gives the results of experiments upon the living organism. And in the third mention is made of those diseases and affections of the muscular and nervous systems, which are found mitigated or cured by the application of Galvanism.

It is evident that Mr. Lobb is a practical man. No one can peruse the pages of his pamphlet without arriving at this conclusion, and as an opinion is always valuable when given as the result of *experience*, we cordially recommend these *Practical Hints* to the consideration of all who take an interest in the subject of Galvanism, as one of daily-growing importance.

The Principles and Practice of Dental Surgery. By CHAPIN A. HARRIS, M.D., D.D.S., Professor of the Principles and Practice of Dental Surgery, in the Baltimore College of Dental Surgery, &c. Seventh Edition. Philadelphia: Lindsay & Blakiston. London: Trubner & Co., Paternoster Row. 1858.

We hail with sincere gratification the appearance of the *seventh* edition of Dr. Harris's well known standard work—

The Principles and Practice of Dental Surgery. To speak in eulogistic terms of a book which has gone through seven editions, would be superfluous. Of the present edition we cannot do better than quote a portion of the author's preface :—" Nearly every page has been carefully revised, and additions have been introduced throughout the entire work. Three new chapters, and a number of illustrative cuts, have also been added. In short, the author believes that no valuable improvement or discovery, coming within the scope of this work, has been omitted in the present edition."

We observe that the employment of electricity in dental operations is noticed at page 418. Dr. Harris says, that in the frequent opportunities he has had of applying this new agent in the extraction of teeth, and thus far about nine out of ten who were placed under its influence, while undergoing the operation, assured him, that they experienced no pain at all, or only very little—not a tenth part of what they had experienced under the operation on former occasions; nevertheless, Dr. Harris says :—" As the use of anæsthetic agents of any kind in the extraction of teeth is attended with inconvenience, nearly always procrastinating the operation, the author is of opinion that their employment, as a general thing, should be dispensed with. He never encourages their use, and rarely finds it necessary to employ them. Indeed, the extraction of a tooth is so simple an operation, seldom requiring more than from two to five seconds for its performance, that most persons would rather submit to it at once, than have it procrastinated by the application of an agent for the prevention of the momentary pain which it occasions. In this opinion we entirely concur.

We should have gone more into the new matter contained in this edition of the " Principles and Practice," but as it did not reach us till near the middle of December, we were precluded from doing so. It would, indeed, be impossible to enter into an elaborate and just criticism of a work containing near nine hundred pages in a hurried manner. We have,

however, gone sufficiently far into this edition to warrant us in saying, that it should be placed in the hands of every student of dental surgery, and that it will be found a valuable, if not indispensable addition to the library of the dentist in practice. The book is well printed, and illustrated by some two hundred and seventy excellent wood engravings.

NOTICES TO READERS AND CORRESPONDENTS.

*** *The publication of the Quarterly Journal of Dental Science ceases with the present issue.*

Arrangements have been made with the proprietors of the *Dental Review* to reprint, in that Journal, the first portion of Mr. Hockley's interesting translation of the division of Sprengel's "*Geschichte de Medicin*," (History of Medicine,) which treats of Dental Surgery, and which appeared in our last impression. We understand the remaining portions of the "Translation" will appear in the *Dental Review* from month to month, until complete.

We are requested to state, that the proprietors of the *Dental Review* will be happy to continue the arrangements in regard to exchange of periodicals which have been made with this Journal.

Publications should be addressed to the Editor of the *Dental Review*, 219, Regent Street, London. (W.)

Mr. Jacob Ayton. (Devizes.) We forwarded your letter to the gentleman who acted as Secretary to the late Dentists' Assistants' Provident Association, and have received the following reply :—

Sir,—I am sorry to inform you, that in consequence of the great want of unity, which I found to exist amongst the Dentists' Assistants', and the still greater reluctance evinced by them to belong to anything partaking of the nature of a benefit or provident association, I was compelled to give up all attempts at carrying out the designs of the promoters of the Association. As a proof of my statement, I would simply remark, that from 500 copies of the rules distributed in the United King-

dom, I could only obtain about 18 members. I regretted having thus to close the matter, as I had received letters from some of the highest members of the profession, speaking most favourably of the attempt. The reason of your correspondents letter being returned was, that the room in Sackville Street was merely hired for the occasion of our meeting; all communications should have been sent to me,

GEORGE HARRIS, 5, Belgrave Sq. W. C.

M. C. D. E. may obtain the work mentioned, of Trübner & Co., Paternoster Row.

ASSOCIATE. See answer to Mr. Ayton.

MR. CRAMPTON. We cannot furnish you with the address of the late editor of the Journal to which you refer. He is understood to be, what is called, *non est*. No doubt contact with such an individual would tend to increase the ill feeling, and probably to this cause, some of the very questionable doings of the opposition may be attributed. "Evil communications corrupt good manners."

CAUSTIC. (Hull.) We have received your able letter, but the squib you allude to is so contemptible, that it is beneath notice. If we published your remarks, some importance might be given to the filthy abuse of the writer of the squib. The eyes of the members will now be opened to the disgraceful system adopted to oppose the College, and the party from which it emanates will find that such a disreputable proceeding will recoil upon themselves. The penalty on the printer for illegally issuing the slanderous production without his name appended, would be £20, and for the sake of society, we trust means will be adopted to find him out.

MR. KEAN. For the reasons stated above, we must decline publishing your letter. The suggestion of reprinting the tissue of fabrications and scandal, in order to give the profession generally some idea of the *animus*, as well as the "literary talent" (!) of the clique, would be good, if the language of the paper were less coarse. But we cannot pollute our columns by the insertion of such disgusting nonsense.

A YORKSHIRE DENTIST.—Your letter reached us too late for insertion. We should imagine the parties whose conduct you criticise, must already have learned to appreciate your exertions.

M. O. S. complains, that his expectations in regard to a Society he has recently joined, are sadly disappointed. He was led to expect, that newspaper and circular publicity was looked upon with abhorrence by the Managing Board; but he finds that the men who were *loudest* in condemning others, without just cause, have been, and are still, para-

ding their names before the public as supporters of a Charity. It would not be right to suppose that these gentlemen wish to employ a Charity as an advertisement of themselves, even though it may be made to bring their names very prominently forward in connection with their professional avocations; but in common honesty and consistency, they should be careful not to impute blame to those of their fellow practitioners, whose names are necessarily known in connection with a public institution. Let it be remembered, that the latter do not, and never have, addressed Circulars to the *General Public*, as the former have done in regard to the Institution over which they preside.

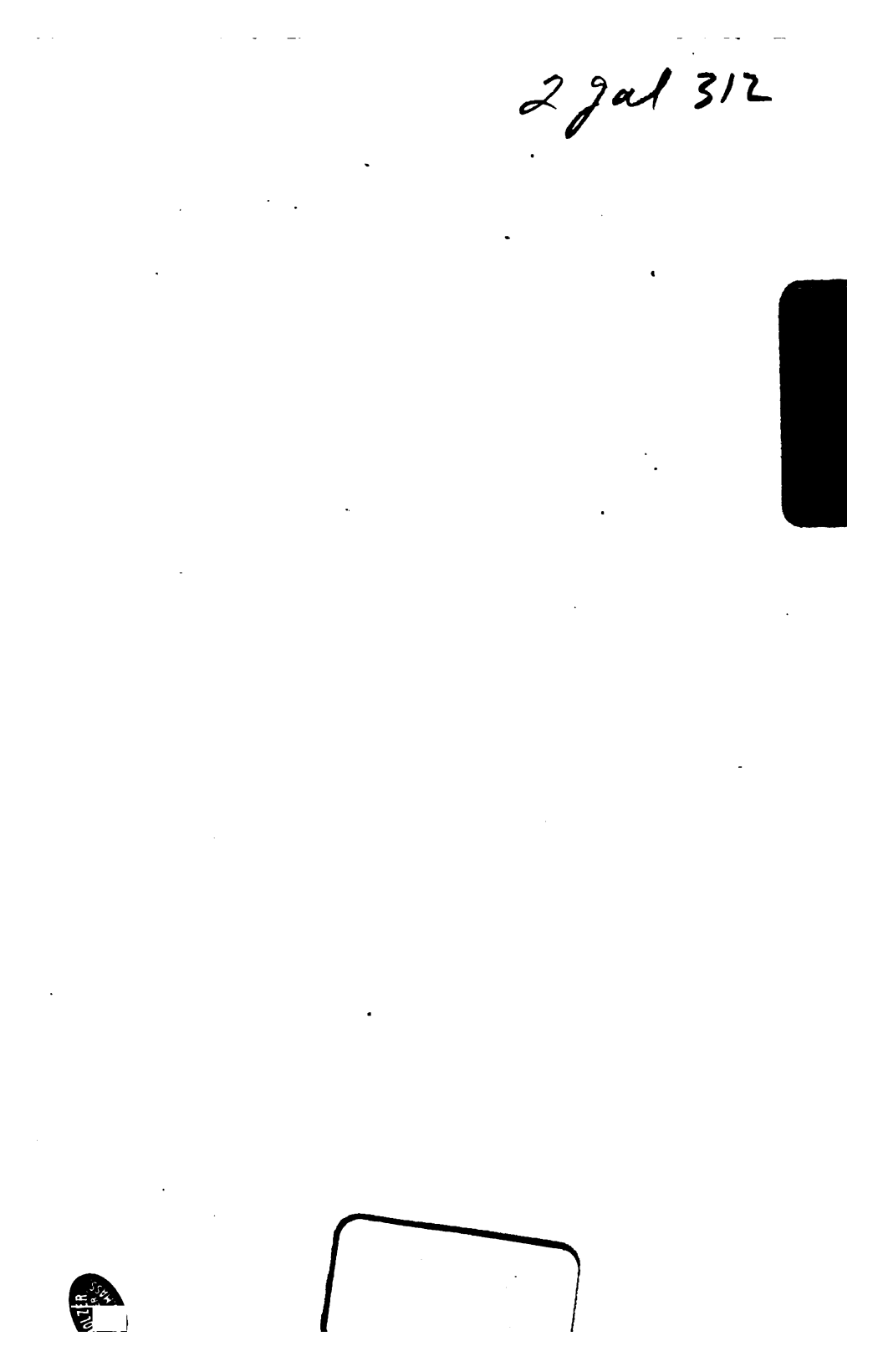
Letters, Communications, &c. have been received from Mr. J. C. Smith, Mr. Harding, Mr. Parker, Dr. Hawkins, Mr. Belfour, Dr. Purland, Mr. Hearder, Mr. Putnam, Mr. Horne, M.R.C.S., A Mechanical Dentist, Dr. McMurdy, Mr. J. Bate, Mr. J. Ayton, The Writer of the Origin and Development of the College of Dentists, Mr. Harris, M. C. D. E., Mr. Crompton, Mr. Harrington, Caustic, a Yorkshire Dentist, M. O. S., Mr. Hockley, Mr. S. Longhurst, Mr. Lovell, Mr. Thomson, Mr. Patrick (too late), Dr. Paul (too late), &c.

Books received.—The Dental Register of the West (Sept. 1858)—The American Journal of Dental Science (October 1858)—The Dental News Letter (October 1858)—Lobb on the Administration of Galvanism for Treatment of Disease—Harris's Principles and Practice of Dental Surgery (7th edition)—Beales's Archives of Medicine (No. 3)—The Dentist, Berlin (July, Aug., Sept. and Oct.)

Notice.—Vols. I. and II. of the "Quarterly Journal of Dental Science" may be obtained of the Publishers, Messrs. Walton & Maberly, 28, Upper Gower Street. Price 12s each, neatly bound in Cloth.

CHARLES RITCHIE AND CO.,

Printers,

FORE STREET, LONDON.

2 Jal 312